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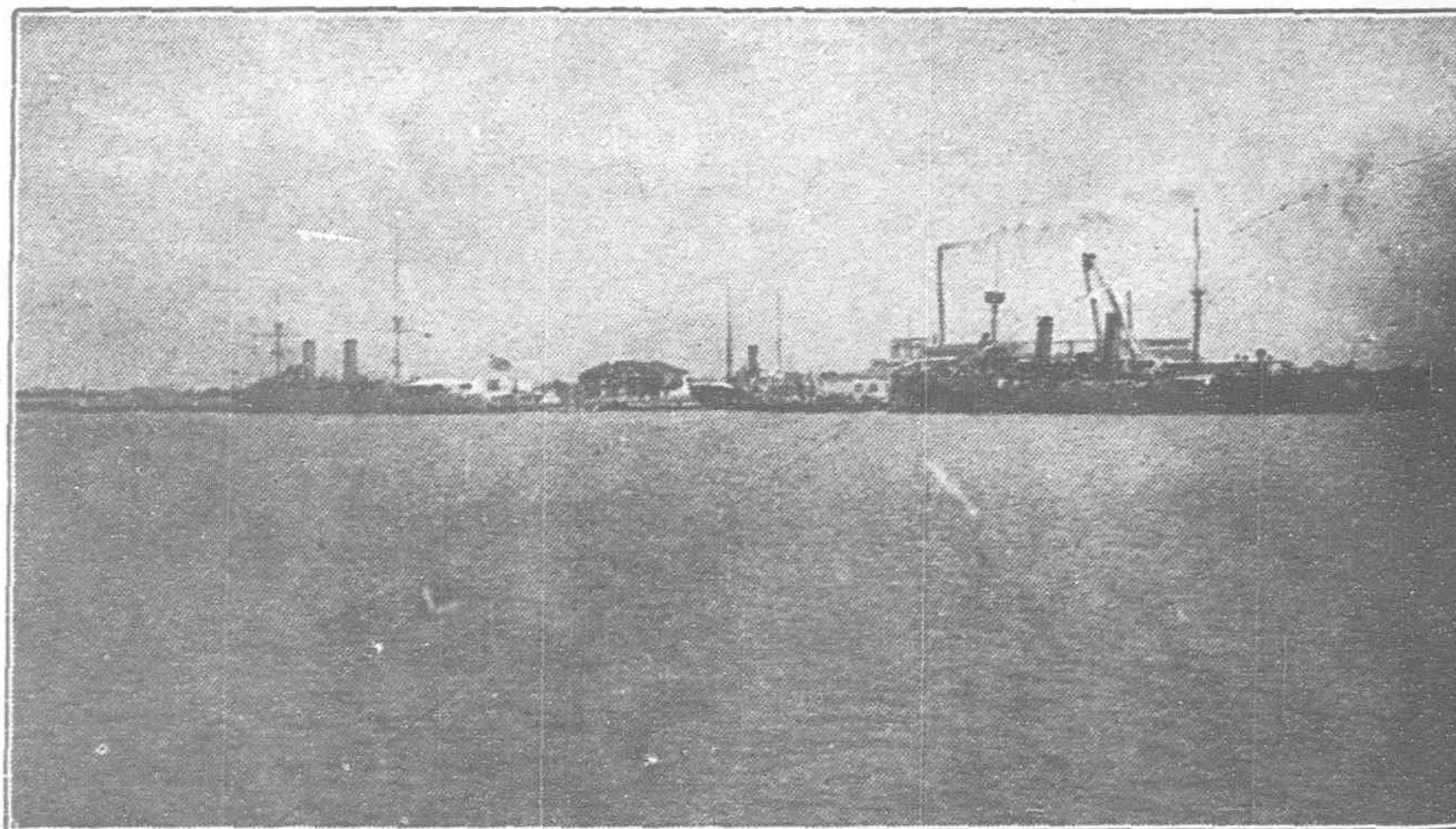
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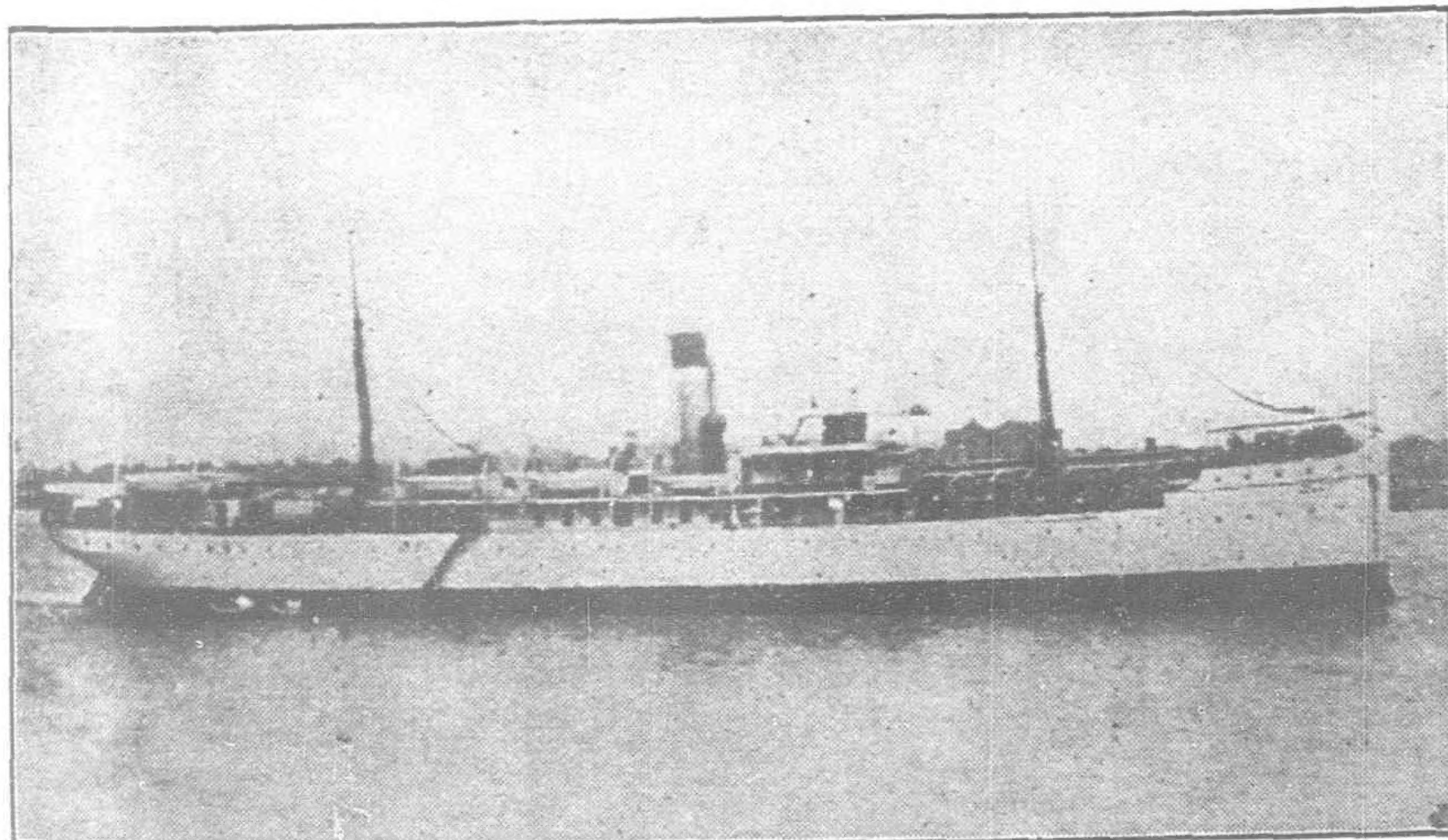
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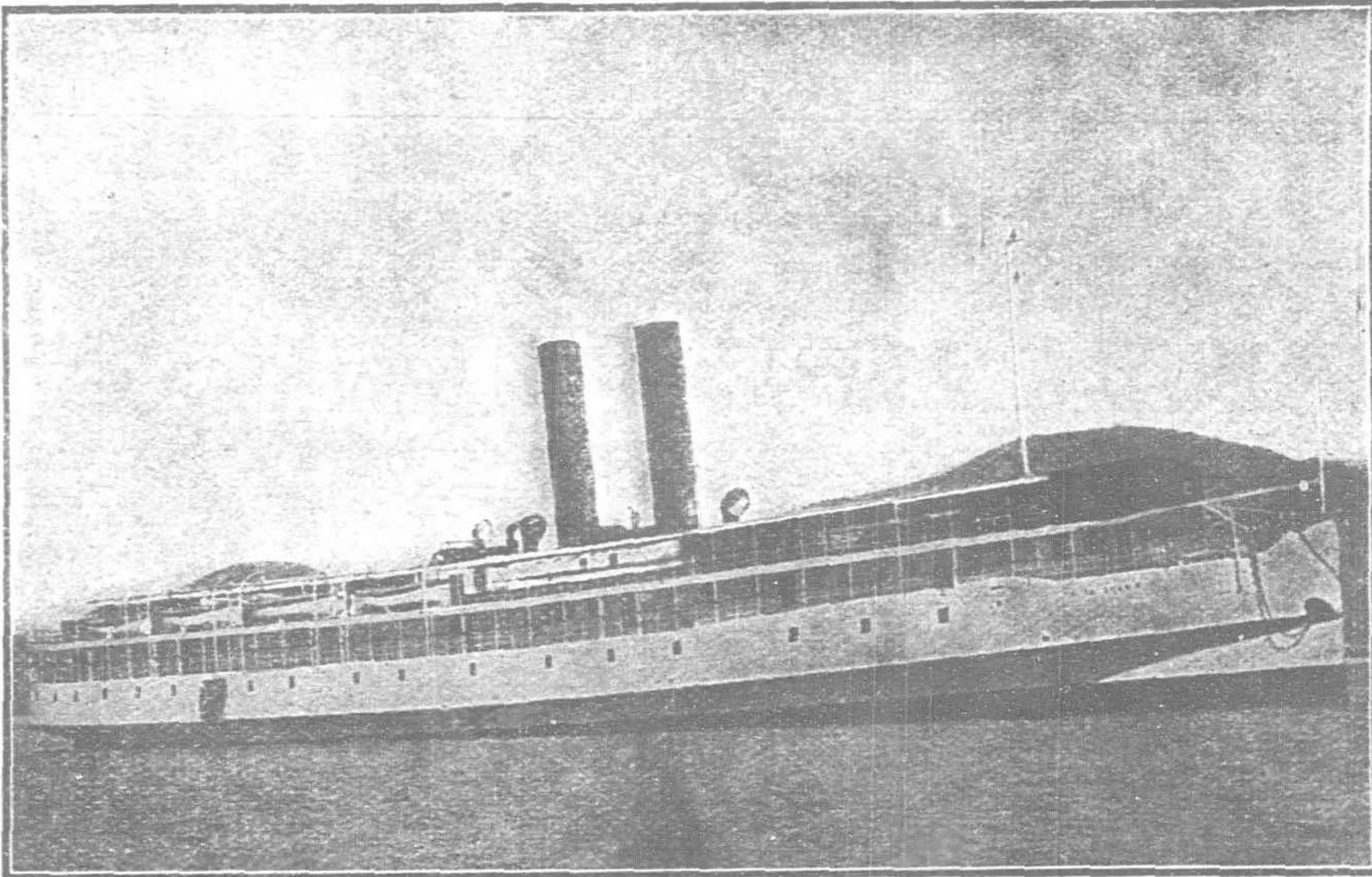
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No. 2 Dock, Kowloon . . .	371	74'	18' 6"	7' 6"	—
No. 3 Dock, Kowloon . . .	264	49' 3"	14'	7' 6"	—
Patent Slip, No. 1, Kowloon .	240	60'	14'	7' 6"	—
Patent Slip, No. 2, Kowloon .	220	60'	12'	7' 6"	—
TAI-KOK-TSUI					
Cosmopolitan Dock	466	85' 6"	20'	7' 6"	—
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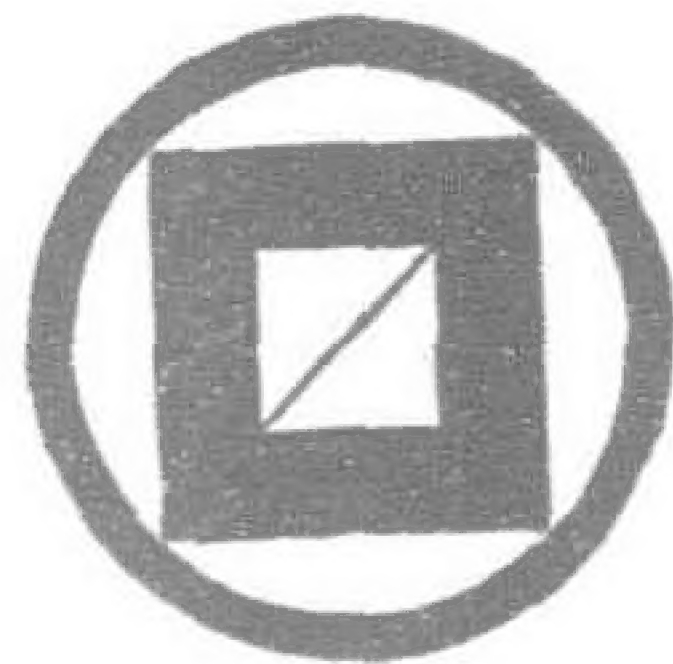
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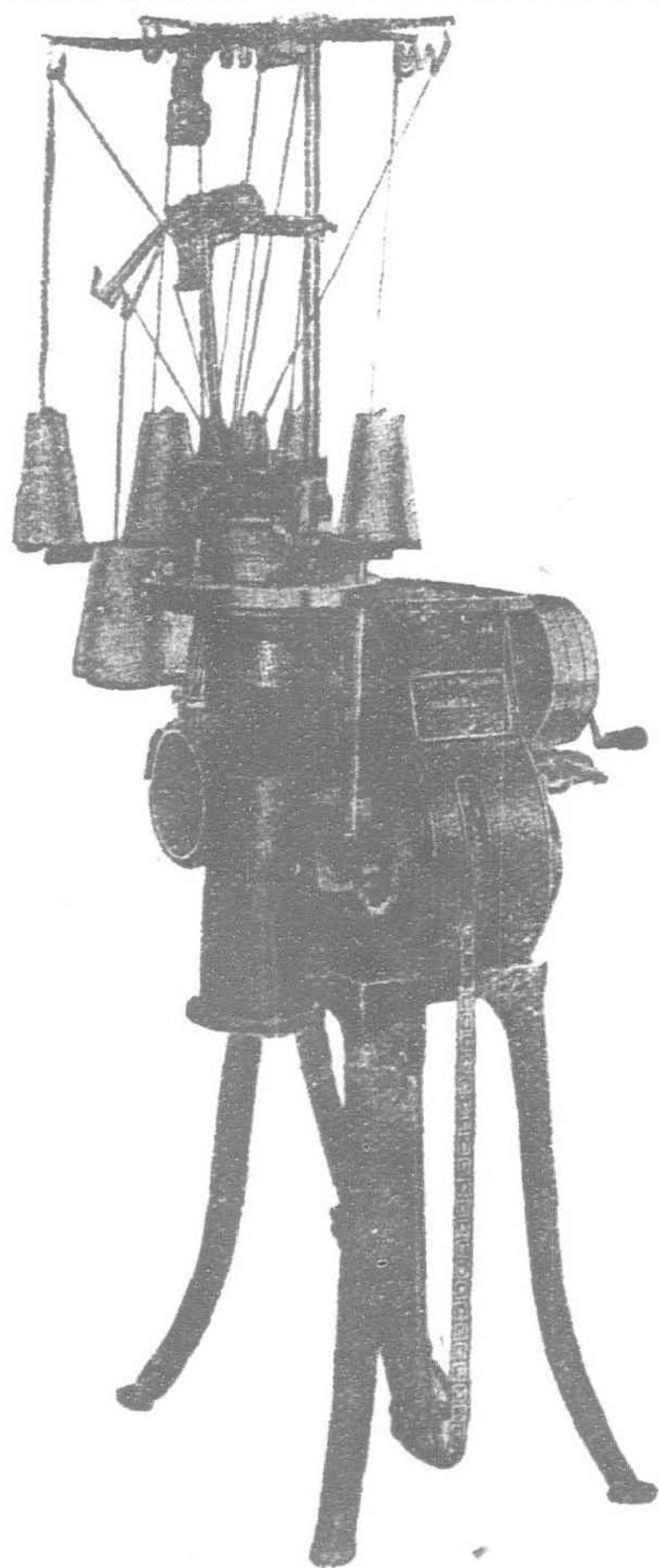
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The Far Eastern Review

ENGINEERING

FINANCE

COMMERCE

VOL. XIV

SHANGHAI, AUGUST, 1918

No. 8

The Fisheries of Japan

A Great and Valuable Industry

BY JIHEI HASHIGUCHI.

There are more people engaged in fishing and allied industries than in any other single industry in Japan, with the exception of agriculture. This is due to the length of the coast-line of Japan, some 20,000 miles, and the favourable geographical situation of the country. Marine life is rich in variety and abundant in quantity. It ranges from the denizens of the Arctic seas to those of the tropics. The Kurile Islands lie within the Arctic zone, the greater part of the main islands of Japan are in the temperate, and Formosa and the Pescadores are in the tropic, zone.



SARDINE FISHING.

In 1916 fishery products reached in value Yen 108,720,000 or more in Japan proper alone. Adding the production from the territorial possessions of Japan, the total amount rose to Yen 126,467,925, divided as follows:—Japan Proper, Coastal Fisheries, Yen 102,242,143; Pelagic Fisheries, Yen 6,480,728. Total, Yen 108,722,871.

Territorial Possessions, Korea, Yen 6,142,730; Kwantung Peninsula, Yen 464,294; Formosa, Yen 2,102,796; Russian Far Eastern Coast, Yen 5,762,388; Team Trawlers, Yen 3,272,843. Total, Yen 17,745,054. Grand Total, Yen 126,467,925.

Compared with five years before this shows an increase of 40 per cent. in the total amount of production. The value of manufactures from sea products, at the end of 1916, was Yen 63,990,000 for Japan proper—an increase of 50 per cent. over 1901. There has been a general increase in Sakhalin, Formosa, Korea, Kwantung Peninsula, and other Japanese dominions. The value of fishery products by culture, at the

end of 1916, was Yen 5,280,000, which, compared with five years before, shows an increase of 30 per cent.

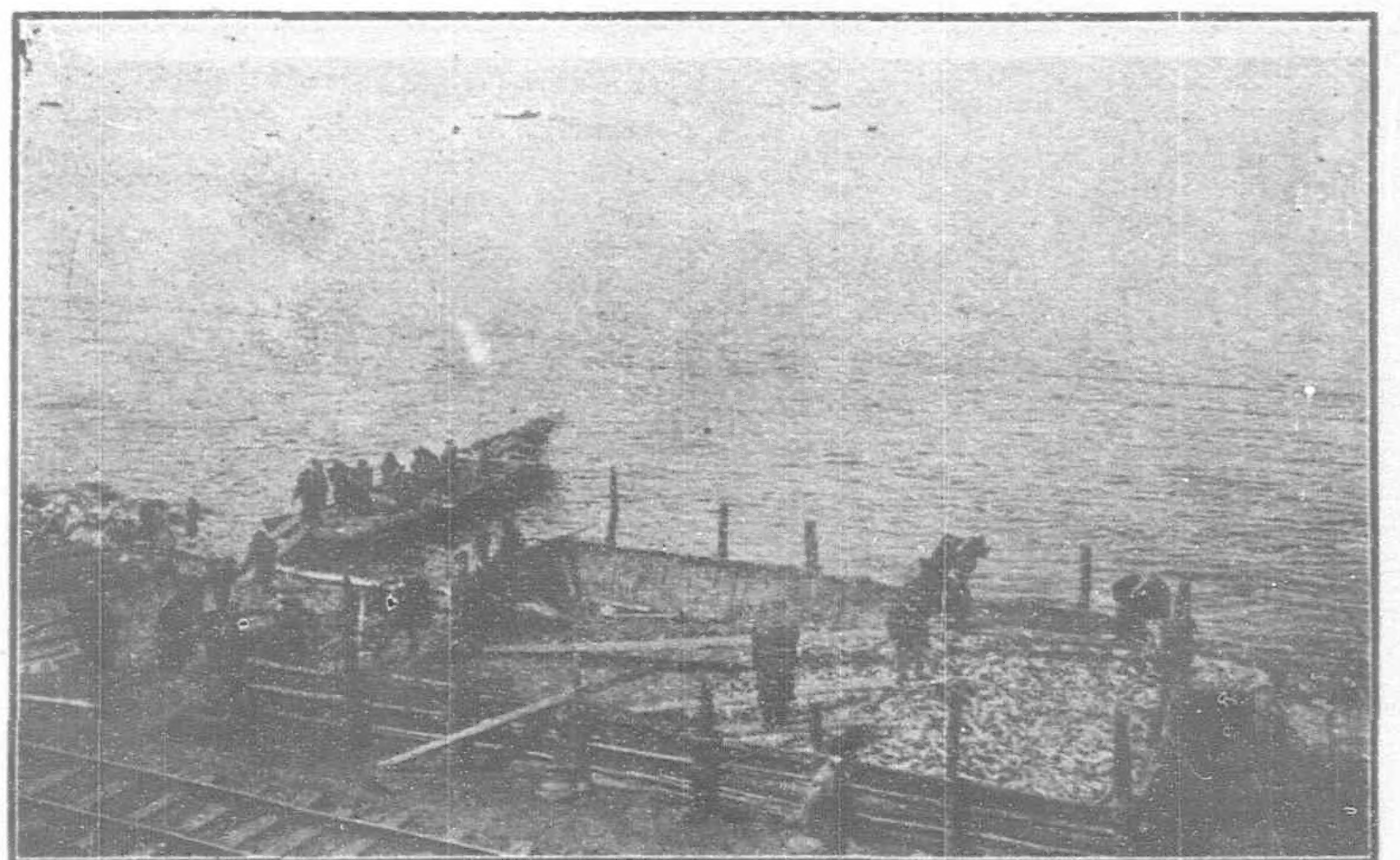
The trade in fishery products received a set-back by the European War, yet the value of exports at the end of 1916 was Yen 30,000,000, an increase of more than 100 per cent. over five years before.

Latest statistics show that there are over 2,300,000 people actually engaged in fishing and allied industries in Japan, while those engaged in fishery in colonial waters numbered about 206,000.

FISHING VESSELS.

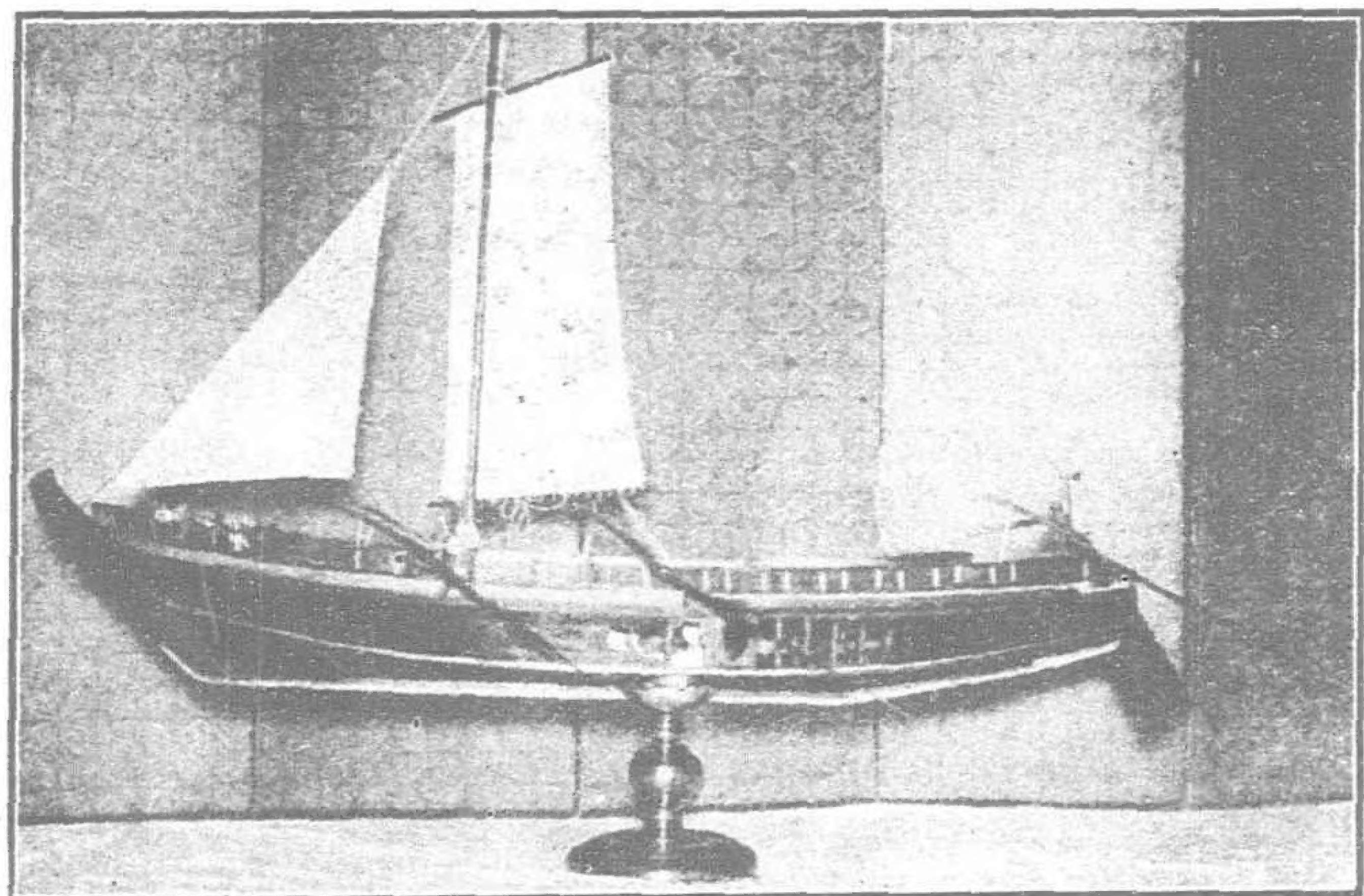
The vessels engaged in deep sea fishery in 1912 totalled 419,166, comprising 490 foreign-style craft and 6,000 Japanese-designed boats, the crews numbering 47,112. There were then 124 steam vessels, 30 being whalers and 39 trawlers. Motor fishing boats numbered 1,674. In addition to these there were 3,250 fishing vessels in Karafuto, 9,500 in Formosa, 4,526 in Korea, and 390 in Kwantung Peninsula. In 1916 the fishing vessels numbered 394,701, of which 2,800 employed motor power.

The great expansion of the fishing industry after 1902 was effected by government encouragement. Fishing grounds were extended, fishing boats were improved, and subsidies were granted to boats engaged in pelagic work. In eight years sailing vessels increased by 135 per cent. and steam vessels by 1,000 per cent. The gas engine and kerosene motor became extremely popular, and the vessels so equipped rose from one in 1905 to 2,800 in 1916.



HERRING FISHING.

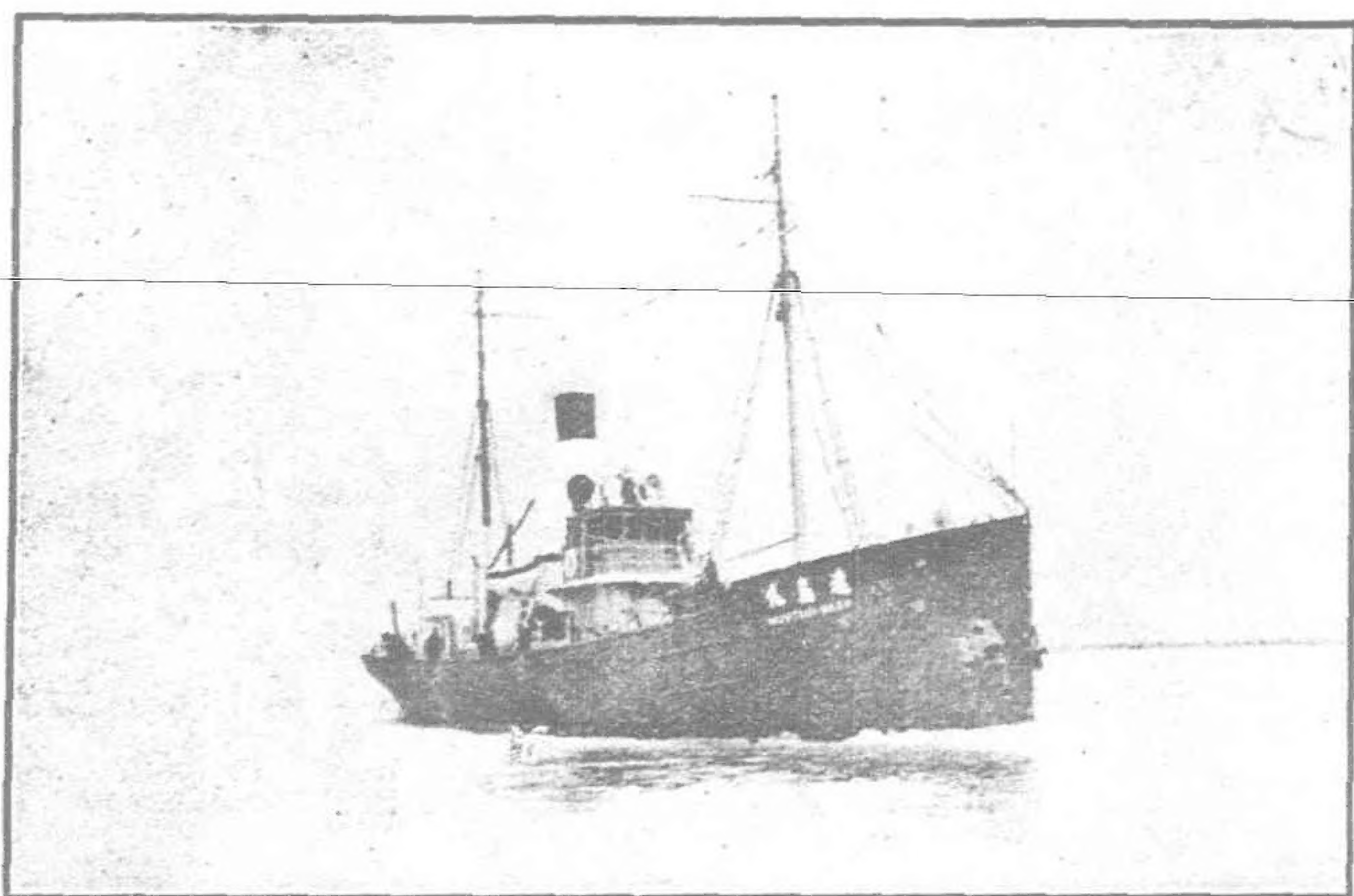
The *Hayatori Maru* is a representative fishing vessel. She was launched in 1913, her dimensions being length (over all) 130-ft.; length (perpendiculars), 122-ft.; width (moulded), 22-ft. 9-in.; depth (moulded), 13-ft. 6-in.; engine, triple expansion; horse-power, 670; speed 12 knots; gross tonnage, 260; material, steel. She is used for inspecting or guarding the fishing vessels as well as for investigating fishing grounds.



MODEL OF JAPANESE TYPE FISHING BOAT.

The steam trawlers are all built after the English model, as are also the trawl nets. The method of trawling is also English. Out of 140 steam trawlers now in Japan ten or more were built in England and the remainder in Japanese dock-yards. The size of the trawlers run between 160 and 280 tons, but vessels of 220 tons are mostly used. The tendency is towards a gradual increase in tonnage. The *Shinko Maru* is a representative trawler, her dimensions being length (perpendiculars), 120-ft.; width (moulded), 21-ft.; depth (moulded), 11-ft. 9-in.; engine, triple expansion; horse-power, 624; speed, 11.28 knots; gross tonnage, 212.7; material, steel.

The whaling vessels used comprise boats of 10 tons or less (Japanese design); 10-20 tons (Japanese design); 400 tons or more, sailing vessels (American style); steamers of 100 tons or more (Norwegian style). The latter have been mostly used in recent years, the Norwegian style of whaling being judged best suited for Japanese waters. Engines and whaling guns have also been imported from Norway, Norwegian gunners originally being employed to instruct the Japanese in their use. The Japanese Government, however, discovering this system to be very destructive of the species, promulgated regulations in 1909 to protect whales, and this type of vessel has decreased to 31.

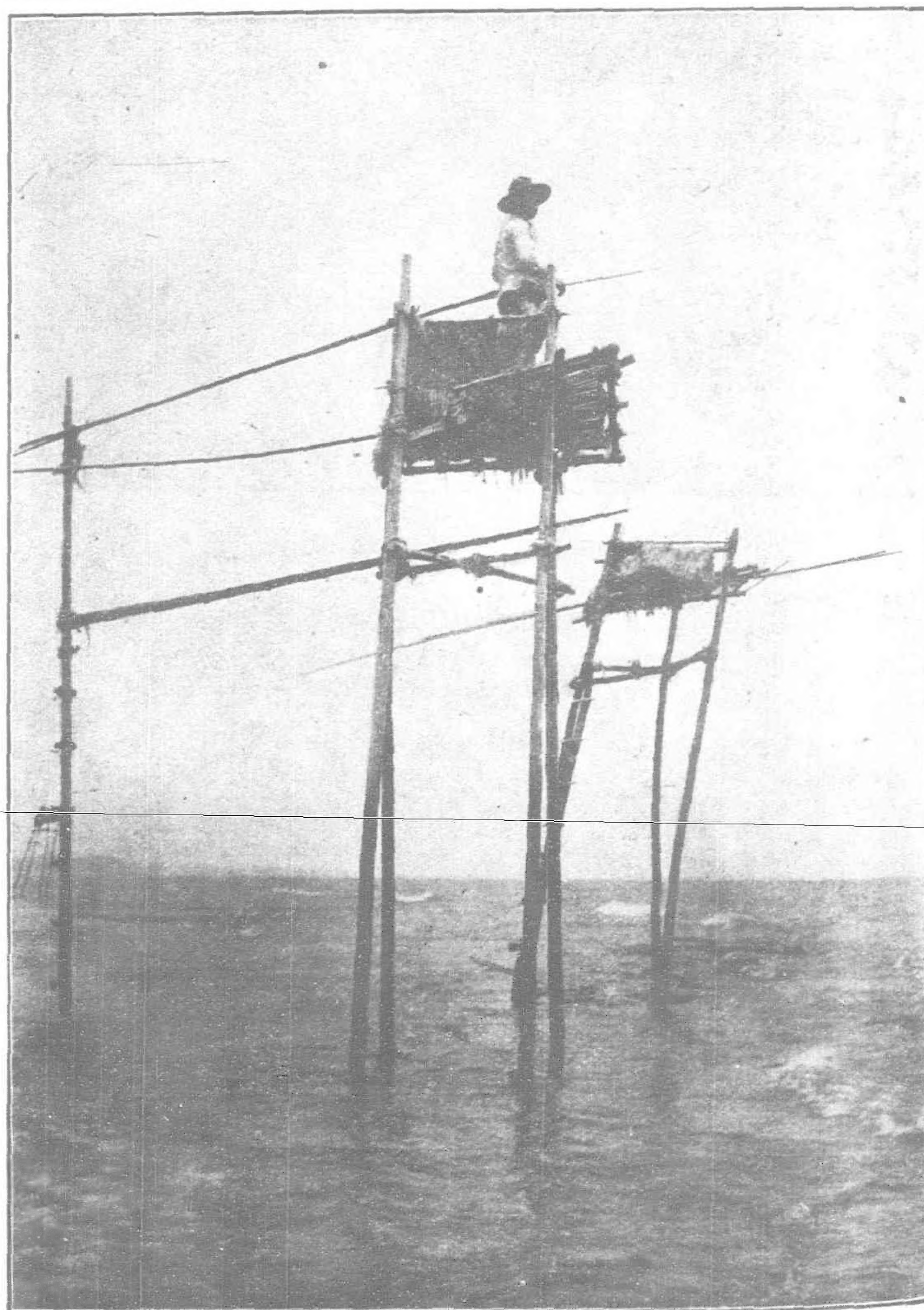


"HAYATORI MARU," THE GOVERNMENT WARSHIP.

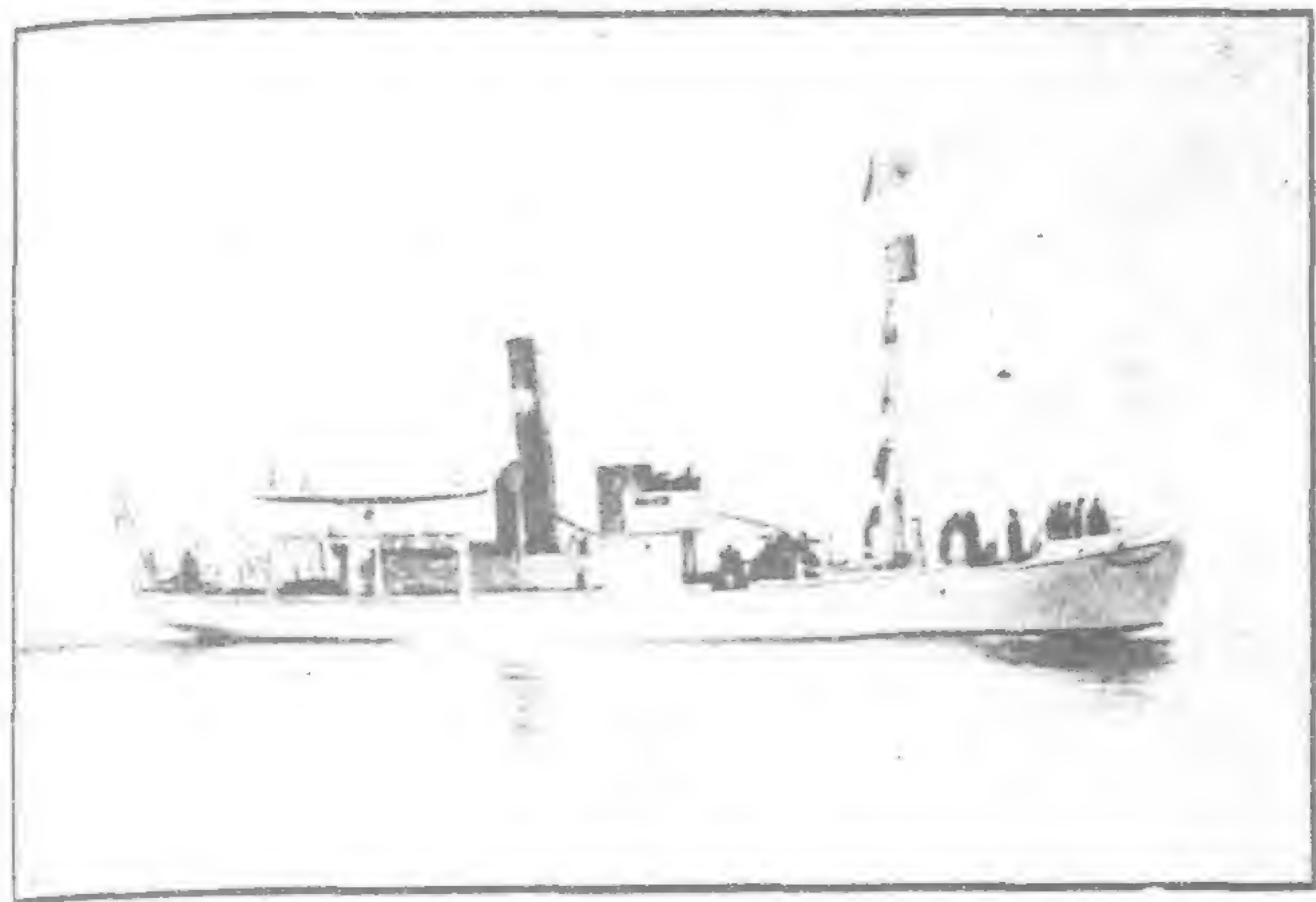
Owing to marine motor development sailing vessels have decreased. There were 40,000 in use in 1912. The types and construction of motor boats differ greatly according to

locality and purpose for which they are used, and those most in use are improved Japanese fishing boats fitted with an engine. This type of boat is of very simple construction, is cheaply built, has great buoyancy and is easily handled. The boat of which a photograph of the model is shown is engaged in tunny trawl-line fishing in the Pacific. It is a sailing vessel with an auxiliary kerosene motor of 12 horse-power. A rolling gear for hauling up the line is driven by motor. The after part of the boat is used for stores, and the kitchen, engine room, oil tank, fish pen, and crew's quarters are located forward in the order mentioned. Each compartment is divided into water-tight bulkheads. The propeller is arranged with a universal joint so that it may be lifted up when sailing or making a landing. The length (over all) is 55-ft., and between perpendiculars 47-ft.; width (moulded) is 10-ft. 6-in.; depth (moulded), 4-ft. 4-in.; length against depth, 10.53 times; length against width, 4.47 times; depth against width, 2.44 times; gross tonnage, 13; speed, 6 knots. The keel is flat, of fir 6-in. thickness, and 2-ft. 8 $\frac{3}{8}$ -in. at the broadest, 1-ft. 7-in. at the stern and 6-in. at the stem in width. The stern is of Keyaki 6-in. thick and 1-ft. 10-in. wide. The stern plate is of fir 3-in. thickness, 8-ft. wide (four sheets joined). The outside plating is of spruce 1 $\frac{1}{2}$ -in. thickness and 10-in. or less in width. The bilge is longitudinal pine timber of 31-in. in thickness and 4 $\frac{3}{4}$ -in. in width. The frame is of oak or camphor of 3 by 3 $\frac{1}{2}$ -in. at the bottom and 3 by 3-in. at the top. The distances between frames are 1-ft. 5-in. at the engine room and 1-ft. 10-in. at the fish pen (the pen where the fish are kept alive). The beams are of pine, used at a distance of two frames. The deck is of spruce 1 $\frac{3}{4}$ -in. in thickness and 8-in. in width.

The ordinary Japanese type fishing boats range from less than 18-ft. to over 30-ft.



LOOK-OUTS OF THIS TYPE ARE ERECTED BY JAPANESE FISHERMEN ALONG THE COAST.



STEAM WHALER.

TRAWL FISHING.

The otter trawl now used in Japan was introduced in 1905, but it is only since 1911 that it has made rapid progress. The fish caught by the trawl are various deep-sea fish, such as porgy, red snapper, nibe (scaena), ishimoichi (scaena), kanagashira (guanard), flounders, soles, sharks, and skates.



THE FIRST CUT—IRON BLUBBER HOOK TEARING UP THE FLAP OF BLUBBER.

The fishing grounds are the waters of the Yellow Sea, the Japan Sea, and the China Sea.

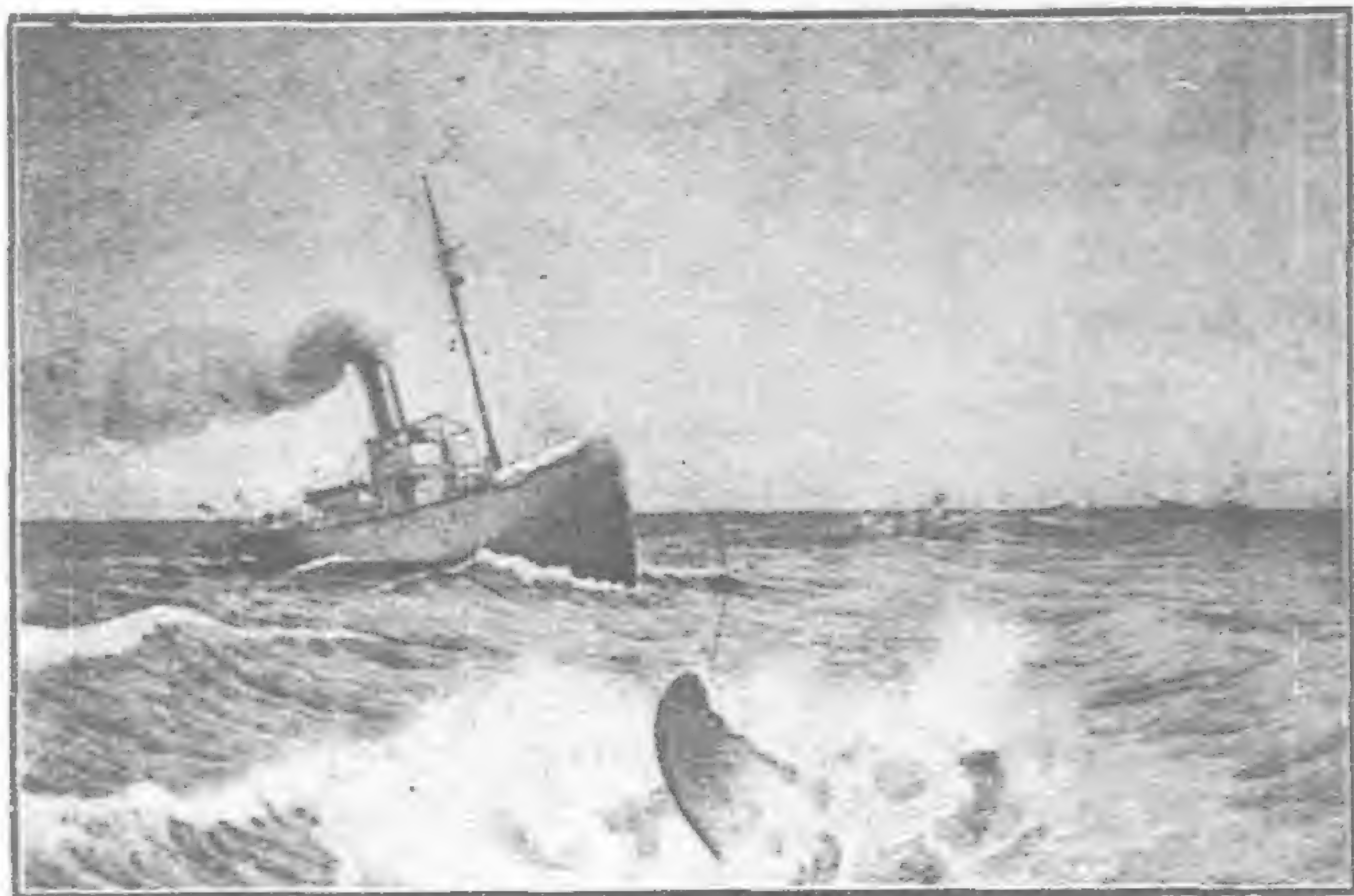


HAULING IN THE BLUBBER BY WINDLASS.

WHALING.

The mammals, belonging to the whale family found in Japanese waters, are Pacific right whales, humpback, sulphur-bottom, finback, sperm, grey, and bottle-nose whales. These are found in the Pacific Ocean, the Korean Sea, and the Japan Sea. The whaling industry in Japan has made such rapid progress within the last ten years that the annual average catch is now about 1,500 whales, valued at more

than Yen 1,500,000. There are three methods of whaling, known as steam or Norwegian whaling, sail or American whaling, and boat or coast whaling.



STEAM WHALER AT WORK.

In the case of steam whaling, the steamer used is of 100 tons or more, and is a specially built steel vessel, carrying a whaling-gun at the bow.



AT WORK WITH BLUBBER SPADES.

In the sail whaling, or the American method, a sailing vessel of three or more hundred tons with or without an auxiliary engine, is used. Such a vessel carries four to five boats which are used for chasing whales. Each boat is armed with guns or bomb harpoons. Whales killed by this method are chiefly of the sperm variety. The catch is taken to the vessel, alongside of which the blubber is removed by means of large lances and spades. The head is also taken on board, and the oil is tried out of the jaws and blubber.



THROWING OUT "SCRAP" FROM THE BOILING OIL.

In boat whaling or shore whaling, small boats of eight feet beam are used. Such boats, armed with guns or harpoons, engage in whaling several miles off shore. The

whales caught by this method are chiefly the bottle-nose, which are numerous along the coasts of Boshu and outside the Bay of Tokyo. The whales thus caught are carried ashore, where the blubber is tried out for oil, while the red meat is sold, fresh or salted, for food, and the bones and refuse are used for fertilizer.

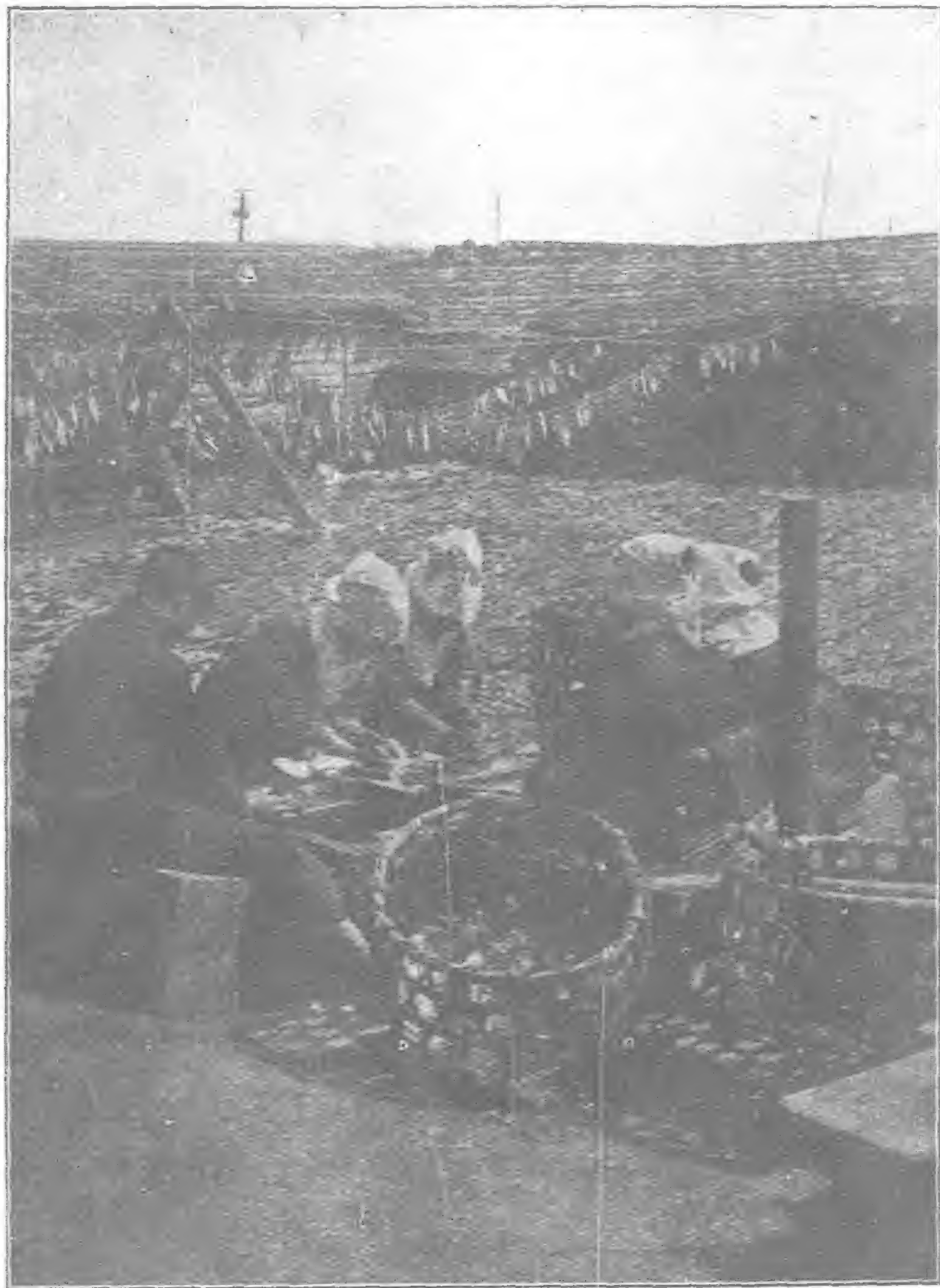
The season for whaling differs according to the species hunted, but the industry can be carried on throughout the year by changing the whaling ground.

The whaling industry is almost a monopoly in Japan, being practically in the hands of the Oriental Whaling Co., Ltd., of Osaka. The operating area far exceeds in extent that of Norway and is rapidly spreading along the coast from Chosen north-eastwards.

The hand line is used by schooners of a hundred to a hundred and fifty tons, operating in the waters of the Kurile Islands, and the Okhotsk Sea. A hand line of about ninety fathoms bearing two hooks is used. A schooner is filled in a few days' fishing.

BONITO FISHING.

Bonito fishery is peculiar to Japan, as no other country is engaged in it. It is one of the most important industries in Japan, the annual catch being as much as 50,000 tons or more, valued at approximately Yen 7,000,000. The fishing is conducted along the entire Pacific coast of Japan, but the most important bonito centres are Shizuoka, Kochi, and Kagoshima prefectures. The bonito frequents water of 23° F., or in the "Kuroshiwo", and it follows the warm



PRESERVING FISH BY DRYING IN THE SUN.

COD FISHING.

Codfish are found abundantly in Japanese waters. Behring Sea, Sea of Okhotsk, Japan Sea, the waters off the Kurile Islands, and Hokkaido, and the Yellow Sea, swarm with this fish. In recent years codfish have begun to be exported, and the business has developed.

The implements used for cod fishing are trawl lines and hand lines. The former consist of a long trunk line, to which short lines called "ganging", each with a hook at the end, are attached. A two hundred-fathom trunk line, with a hundred or more hooks attached, makes a "basket", and each boat carries fourteen to fifteen such baskets. The bait used for this comprises herring, squid, flounders, salt sardines, and devil fish.

current toward the north-east in spring until it reaches the sea of Awomori prefecture; and late in the autumn it returns south-west. In the southern provinces, this fish may be seen all through the year, but its fishing season is from April to October, as a rule. Sailing vessels of twenty to forty tons are used. Each boat is manned by thirty or forty fishermen, who use a fishing rod three fathoms long. The vessel goes out several hundred miles into the open sea in pursuit of bonito, and when a bonito school is sighted, live bait, usually sardines kept in the pen, is scattered about to attract the fish. If the school can be kept around the vessel all hands stand up and engage in the fishing using the rods with baited hooks or flies. This fishing, which presents most exciting scenes for a few minutes at a time, has been carried on in Japan from time immemorial, but in comparatively unsafe

craft, until recently. There has been great improvement and now motor-engines are being used for propelling the vessels.



COMMON TYPE OF FISHING BOAT.

In this fishing the most important factor is live bait, which is becoming very scarce. Seeing this the purse seine has been successfully experimented with and it is most likely that this method will become popular.

MACKEREL FISHING.

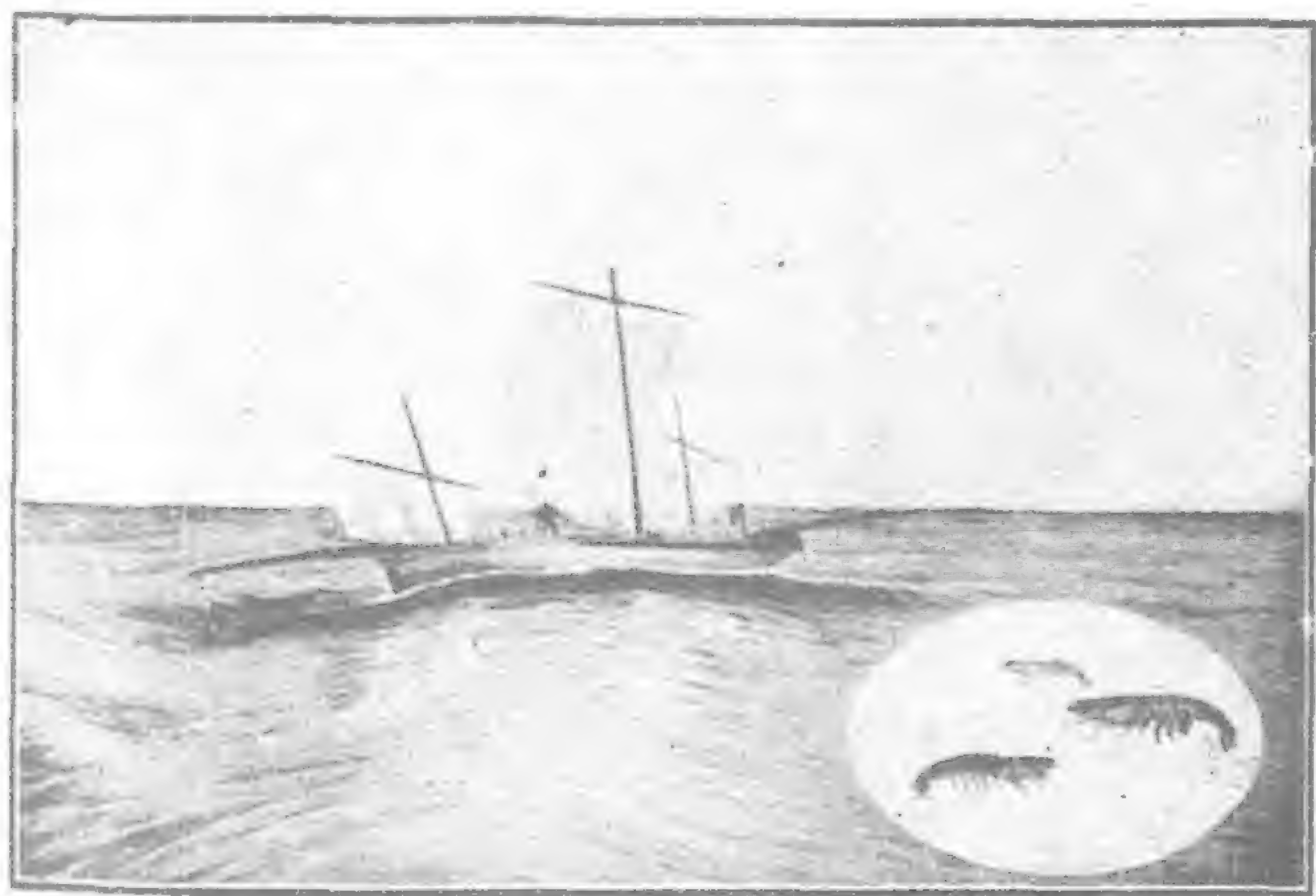
Mackerel are found everywhere in Japanese waters, but the seas in which they are most abundant are the Japan, Korean, and Yellow Seas. The fish is caught in both spring and fall, hence the names spring and fall mackerel. The fall mackerel is fatter and larger, and, therefore, brings better prices. The annual catch averages Yen 2,500,000.

The implements used for mackerel fishing are scare-cord seine, purse seine, pound net, drift net, and trawl line and hand line. The most important are the first two seines.

TUNNY FISHING.

Tunny are found in waters as far south as Formosa and as far north as Hokkaido, but the best known tunny grounds are along the Pacific coast of Japan proper. The annual catch averages 13,000 tons or more, valued approximately at two million yen.

The implements commonly used for tunny fishing are trawl line, drift net, large trap seine, haul-ashore net, and improved purse seine; but the hand line and the long line (hikinawa) are also used to some extent.



SHRIMPS AND SHRIMP FISHING.

The trawl line is used by sailing boats with or without auxiliary motor-engines, of eight to nine feet in beam. Ten or more fishermen man a boat and each boat carries thirteen to fourteen baskets of trawl lines, of 240 fathoms each. The bait used are squid or skipper (*scomberosx-sajori*).

The drift net is employed by boats of ten or more feet in beam manned by ten or more fishermen.

The improved purse seine used in tunny fishing consists of a 10-fathom pocket and two wings of 480 fathoms of straw net. The seine is carried by a boat of 7½ feet beam, and

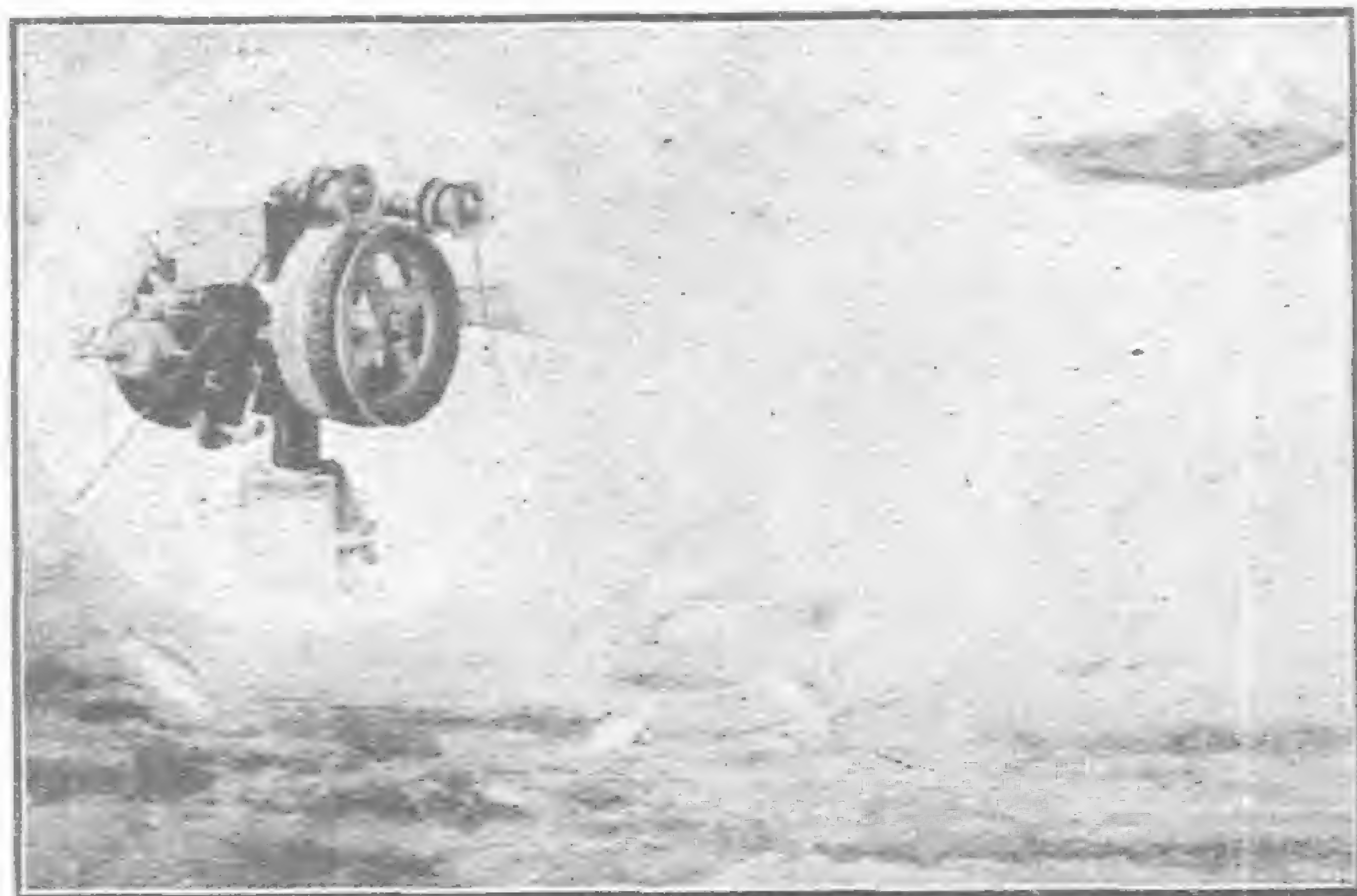
two other boats, each of 5½ feet beam, assist in drawing the seine around the fish. The fishermen engaged in the party number about sixty. The purse seine is also being experimented with for this fishing, but its success is still in doubt.

SARDINE FISHING.

This is the most important fishery in Japan, its annual catch amounting to as much as 250,000 tons, valued at nearly Yen 10,000,000. Sardines are divided into three species, as maiwashi or true sardine, seguroiwashi or anchovy, and urume-iwashi or round sardine. All of these swim more or less together, in spite of their biological differences. They migrate in large schools along the coast of Japan from Hokkaido to Formosa.

Purse seines, improved purse seines, haul-ashore seines, drift nets, pound nets, and scoop seines, are used for sardine fishing.

The improved purse seine is of 128 fathoms long and 30 fathoms deep, and this seine is carried by two boats of 8 feet beam manned by thirty or more fishermen.



PORGY FISHING WITH TRAWL; AND A LINE HAULER.

When a sardine school is found along the coast the boats instantly begin to cast out the seine and completely surround it.

The haul-ashore seine consists of a large pocket 30 fathoms long and 30 fathoms in circumference, and two wings 236 fathoms long. Two boats of 9½-ft. beam manned by thirty men carry the seine, and when a sardine school is surrounded with it, the boats haul the seine toward the shore where the fish are finally caught by being driven into the pocket as the wings are gradually drawn to the land.

The drift net consists of several smaller nets, each about 13 fathoms long. These are stitched together to make a length of about 200 fathoms, and this is cast across the current by a boat of six feet beam manned by four to five fishermen. The net is taken in every three or four hours.

The purse seine, used for sardine fishing, is 200 fathoms in length and 20 fathoms deep, and is handled by two boats of 7½-ft. beam manned by thirty or more fishermen. The handling of the seine is the same as that of the improved purse seine.

HERRING FISHING.

This is one of the most important fisheries of Japan. The annual catch averages 250,000 tons, valued at six to seven million yen. This fish frequents the northern seas such as the waters of Hokkaido, Karafuto, Awomori, and Akita, but the best fishing grounds are off the west coast of Karafuto and the coasts of Hokkaido.

A kind of square trap net called "Kakunmi" is chiefly used for herring, but "Yukinariami" (pound net), "Makiame" (circle seine), haul-ashore seine, and the gill nets are also extensively used.



SARDINE FISHING—HAULING NETS ASHORE.

"Kaku-ami" consists of a "main net" and a "Fence net." The "main net" is 70 fathoms long, 10 fathoms wide, and 10 fathoms deep, and the "Fence net" is 120 fathoms long. The "Fence net" is spread outward so as to guide the fish toward the trap or "main net." This net is set near the sea-shore in 10 fathoms of water, where the herring swarm.

When the fish are trapped, the "main net" is hauled up by a boat used for cornering the fish. The fish are then transferred to a bag-net called "Waku-ami" used for landing the catch.

The gill net is three fathoms long and 7½ ft. deep. Thirty or more of these nets are stitched together and cast by a boat of 8-ft. beam manned by four to five men. The net is hauled up at short intervals for collecting the catch.

YELLOW-TAIL FISHING.

This is another of the important fisheries of Japan, its annual catch being no less than Yen 4,000,000. The yellow-tail is found in nearly all Japanese waters.

The methods of fishing vary according to localities and seasons, but the methods most commonly used are the "Ojiki-ami," or large trap seine, and "Makiye" or baiting. The gill net, trawl line, and hand line are also used.

The large trap seine consists of a "main net" and a "guard net." The "main net" is 193 fathoms long and 110 fathoms wide at the opening. The length of the "guard net" differs according to the nature of the fishing ground. The trap seine is set at a point where the fish are known to pass in their migration journeys.

The boats used for the seine number 12 to 13, manned by more than one hundred fishermen. When the fish enter the seine the opening is closed by hauling up the net by several boats in readiness, and the fish are gradually driven into the pocket, where they are caught and transferred to the boats.

By "baiting" the fish are attracted to a certain fish bank, where they are caught by hand lines.

SKIPPER FISHING.

This fish is caught by drift nets or circle seines during the fall months, the annual catch amounting to more than two million yen. A boat of five to seven feet beam, with four to eight men, carries a drift net of five to six hundred fathoms, which is placed across the current in the evening. The manner of taking in the net is the same as the drift net for other fish.

SQUID FISHING.

The squid is caught during the night in August and September. The fish are drawn together by torchlight or fish lamp and are caught by means of squid gigs.

The gigs are made of lead with several sharp points in the shape of false bait. Two of these gigs are tied to the two ends of a balance shaped brass wire by means of gut, each 1½-ft. long. The brass wire is attached at the middle with a small line of 40 to 150 fathoms and ⅝-in. in diameter, thus enabling one line to use two gigs at once.

The boats go out for squid fishing at sunset, and when the fishing ground is reached they are kept almost stationary, and the line is let down deep. At first the squid are caught in quite deep water but as the evening advances and the torch-lights brighten they come up to within two or three feet of the surface. At this time the gigs are tied to fishing rods, two of which are used by each fisherman.

SHARK FISHING.

Sharks are abundant along the sea coast of Japan and there are many varieties. The gear for shark-fishing are trawl lines and gill nets. The trawl line is of 120 fathoms ground line, to which at 10-fathom intervals, hook-lines of 5 fathoms called "ganging" are attached. The bait is pieces of any kind of fish. The boat used is of ten or more feet beam, with a crew of seven to eight men.

PORGY OR RED SNAPPER FISHING.

This fish is a most valued food-fish in Japan. The annual catch amounts to over five million yen. It is caught



TROUT FISHING IN THE HOZU RIVER, ARASHIYAMA.



FISHING WITH CORMORANTS ON THE NAGARA RIVER, GIFU.

in the waters from Hokkaido to Formosa, but the Inland Sea and the Korean Sea are most prolific of this fish. It is caught throughout the year and brings a good price at any season, as the demand is continuous.

The implements used for porgy-fishing are the hand line, trawl line, gill net, scare-cord seine, and haul-ashore seine.

The trawl line consists of a ground line of 380 fathoms, which has attached to it thirty-seven to eighty-five gangings of $1\frac{1}{2}$ fathoms to $4\frac{1}{2}$ fathoms long. A boat manned by six to seven fishermen carries 12 to 30 baskets of these trawl lines, which are cast into the sea before dawn.

The scare-cord seine consists of scare cord known as "Katsuranawa" to which for several hundred fathoms are attached scare boards, and a seine consisting of a pocket 18 fathoms long and two wings of 550 fathoms each.

In this fishing two seine boats of 10½ to 11-ft. beam, two scare boats, and two anchor boats of 7½-ft. beam, and a lookout boat of 7-ft. beam manned by sixty fishermen, are employed. The boats go to the fishing grounds before dawn, and choosing a dull current, the scare boats cast the scare cord of about 20 fathoms depth, and by dragging the scare cord over the bottom, drive the porgy into the seine, which is cast in a circle by the boats. The fish are thus finally driven into the pocket and caught.

FLOUNDER FISHING.

The annual catch of flounder amounts to more than two million yen. The fish is caught during the winter and spring. The implements used are the gill net, the Japanese trawl, hand trawl, and trawl line.

The hand trawl is about ten fathoms long, the net consisting of a pocket, apron, and wings. To the two ends of the wings ropes of 300 fathoms each are attached, and a boat with eight to ten men, casting a buoyed anchor rope into 40 to 130 fathoms water, steers against the tide. When the net is cast the boat returns to the buoy and, hauling the anchor up, drags the net by sailing forward.

SALMON FISHING.

The salmon frequent cold water, and, therefore, this fish is found in the waters of Hokkaido and Karafuto. From September to December the salmon go up the rivers for spawning and at this time this fish is caught by means of trap-nets, haul-ashore nets, or gill nets. The annual catch of this fish amounts to about Yen 1,500,000.

The haul-ashore seine is classified as sea haul-ashore seine and river haul-ashore seine, according to its use. The construction and method of using is practically the same.

In the case of the sea haul-ashore seine, the whole length is 500 fathoms. It is carried by a boat of 9 feet in beam with thirty men, and the right wing called "Dashiami" or "outing-wing" is first cast from the sea-shore outward, and when the pocket is cast, the boat turns its course toward the right and steers gradually landward, casting the left wing, called "Iriami", or "Inning wing." When the fish are thus encircled, the seine is hauled ashore, and a boat takes out the catch.

The trap net used for salmon is the "square trap net" known as "Kaku-ami" which is about the same as the trap net used for herring. This net consists of a "main net" of 70 fathoms and a "fence net" of 120 fathoms. The method of using it is the same as that of the "herring trap net."



PULLING UP A FISHING BOAT ON THE BEACH OF OISO.

CRAB FISHING.

Among the various kinds of crabs the so-called cod-crab (*lithodes camtchatica*) is the most valuable. This species frequents water of fifty to sixty fathoms along the coasts of Karafuto, Hokkaido, and the Kuri'e Islands. During August and September the female crabs come into shallow water of seven to eight fathom for spawning. The annual catch, at present, amounts to more than Yen 1,400,000.



MENDING HIS NETS.

For catching this crab, gill nets and trawl lines are used. The gill net is 25 fathoms long and seven meshes deep, each mesh being one foot and three-quarters ($1\frac{3}{4}$ -ft.). Fifty to eighty of such nets are carried by a boat of 8-ft. in beam manned by seven to eight fishermen, and all these are cast about eight or twelve miles from shore early in the morning. The nets are left until the following day, when the boat comes back and hauls them up for the catch.

LOBSTER AND SHRIMP FISHING.

The spiny-lobster and various shrimps and prawns are abundant in the waters of Japan, and the catch is valued at not less than two million yen. The spiny-lobster and cherry coloured shrimp (*sergestes phosphorlus*) are caught off the coasts washed by the ocean while the "Kuruma-ebi" (*panalus japonicus*), "Shibaebi" (*penaeus joyneri*), and "Aka-ebi" (*penaeus akaebi*) are found in the inland waters or inlets.

The season for catching these crustacea begins in October and ends in the following April. The implements used are the gill net, hand trawl, and Japanese trawl. The last two are used for prawns and shrimps, while the gill net is used

for the spiny lobster. The gill net is 10 fathoms long and 4-ft. deep with 4-in. mesh, and three of such nets are cast around the sea rocks. This is done by a boat manned by two or three fishermen in the evening, and they are hauled for the catch the next morning.

ABALONE FISHING.

The abalone are most abundant in the waters of the north-east Pacific coast, though they are also found off the western coast as well as along the coast of the Japan Sea; they are seldom found in the Inland Sea or in inlet waters. They cling to the rocks, around the sea cliffs of two to twenty fathoms depth where seaweed grows. The best season for catching this monovalve fish is between April and September. It is caught chiefly by women divers, who descend with a small iron implement, like a screw driver, and force the fish from the rocks. Several of these are put into a bag carried by the diver.

In deep water diving apparatus is used for this fishing, but because of the perils of this method it is prohibited or regulated in most places.

There is another method of taking abalone known as "lancing." The abalone are forced from the rock by means of a long spade, and when they fall off a lance with a handle of five and a half *ken* is used for securing them. The annual catch amounts to nearly one million yen.

CORAL FISHING.

Coral is found chiefly in the south-western waters affected by the warm current, such as the seas of Satsuma, Tosa, and Hizen. It grows upon rocks in water thirty to a hundred fathoms deep. The annual output averages 60,000 pounds, valued at Yen 1,200,000.

The implement used for collecting coral is very simple, strong net $5\frac{1}{2}$ by 6 ft. attached at one end to a bamboo pole 6 feet long. At each end of the bamboo bar is a small net of ropes five fathoms long, and under these nets ten similar nets are hung by means of ropes, each 5-ft. long. Below the ten nets three nets are hung by means of brass wire and seven-fathom ropes. Each of these nets has a stone weight of $1\frac{1}{2}$ -lb., and a $2\frac{1}{2}$ -lb. stone is attached to the middle of the bamboo bar, to which four ropes, each of 7-ft., are tied so as to keep the nets in equilibrium when tied together and dragged over the bottom by a rope of one hundred or more fathoms. A small boat with a crew of three or four men goes to the coral bank and casts the nets. When they are drawn over the coral reefs the first net brushes the coral off the rocks and the other nets catch it and bring it up to the surface.

FISHERIES IN NEWLY ACQUIRED TERRITORIES, ETC.

Fishing in the Korean seas by Japanese fishermen began many years ago, but since 1904-5, various steps have been taken to encourage the development of fisheries in Korea by fishermen from Chugoku (middle country, between Shimonoseki and Kobe), Kyushu and various prefectures in other parts of Japan. Fishermen have been encouraged to go out to the Korean seas or to migrate to Korea for the purpose. In 1916 the Japanese fishermen, who ventured to go to Korea, came from all parts of Japan, and the number of vessels engaged in the industry reached to 4,477, with their crews numbering 13,343, and their yields amounting in value to Yen 6,140,000. That was an increase of 100 per cent. in seven years.



CATCHING FISH WITH A GIG.

The chief fish caught were tai, Spanish mackerel, flat fish, millet, yellow tail, shark, halibut, etc.

The fishing industry, conducted by Korean natives, registered 20,187 vessels in 1915 with 261,213 fishermen, with catches valued at Yen 6,360,000. The Government General of Korea has been taking every step in its power to encourage the Korean fisheries.

The fisheries in Kwantung Peninsula by the Japanese began from 1904-5, and in 1916 the number of fishing vessels engaged totalled 218, with the crew numbering 1,449, and the value of yields reaching to Yen 240,000. The Government General of Kwantung established an experimental station for aquatic products and is making investigations. As there is an abundance of tai, cod, and other fish in the waters there, fishing prospects are considered to be bright.

The native fishermen of Kwantung Peninsula numbered 16,642 men, employing 4,084 vessels, their yields being valued at Yen 370,000. The industry is developing side by side with that of the Japanese.

The fisheries, conducted in Formosa by the Japanese, began in 1884-5. The number of motor boats used has increased considerably in recent years. Whereas in 1908 there were 69 vessels engaged in the industry, with crews totalling 234, yielding Yen 40,436; by 1912 the number of vessels increased to 149, the crews to 917, and the yield to Yen 2,102,796. Chiefly, the fishermen of Kyushu go out to Formosa for the industry. The principal fish caught were tai, bonito, sardine, tunny, shark, horse mackerel, etc.

There were 15,277 native Formosan fishing vessels, with 112,144 fishermen, with a yield valued at Yen 1,460,000.

Fishing in Karafuto (Sakhalin) by the Japanese began before 1875. By 1916 the licensed vessels engaged in fisheries there numbered 3,109, employing 16,732 persons, and yielding Yen 4,300,000. The value of the yield by licensed fishermen was Yen 2,590,000. Adding the fresh fish sold the total amount reached Yen 7,170,000. Salmon, trout, herring, crab, cod, plat fish, konbu (sea weeds) were the principal products. The amount of production is increasing every year.

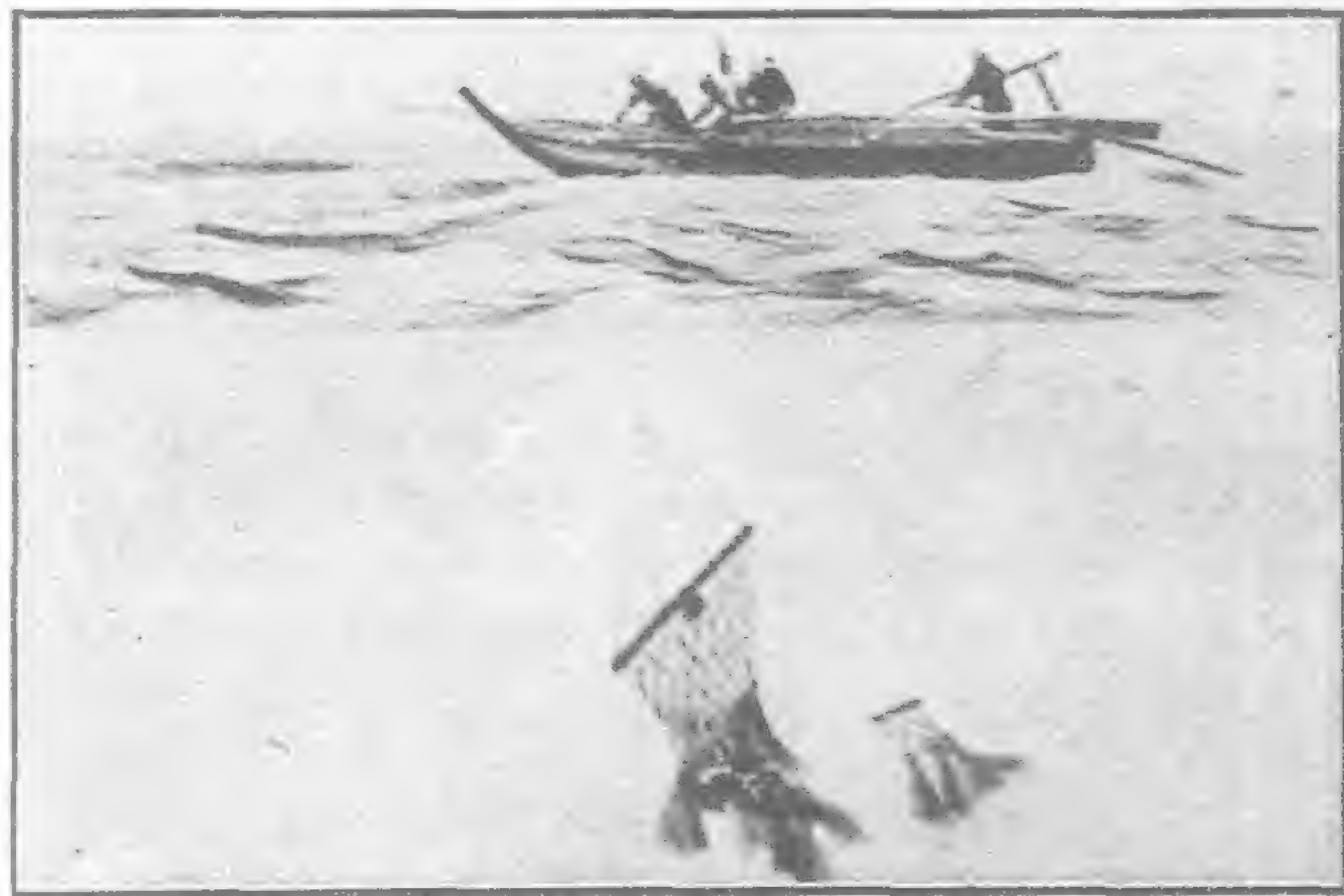
There is nothing particularly worth mentioning about the fisheries by the natives of the island.

Fishing on the coast of Kamchatka and other provinces began long before the Meiji Era. But there was a marked development after the Russo-Japanese Convention was entered into in 1908. In 1916 the number of vessels engaged in the industry was 377, employing 9,929 persons, and yielding about Yen 5,760,000.

NURSERY INDUSTRY.

The nursery industry showed in 1916 an area of 140,000,000 *tsubo* (a *tsubo* equals six Japanese square feet), with yields valued at Yen 5,280,000. It was an increase of 35 per cent. over five years before. In the fresh water nurseries carp, gold fish, leather turtle, eel, and trout were chiefly raised; and in the salt water nurseries, laver, oyster, *slinocushis*, clams, arca, were produced. The most marked development has been noted in the case of laver, followed by carp. *Slinocushis* and arca decreased because of the damage done by the red current and the storms which visited the Japanese seas. But on the whole there has been an increase in the output. According to latest investigations there are lakes, ponds, rivers, bays, shallow seas, etc., covering an area of about 200,000,000 *tsubo*, which are suitable for nursing trout, kogyo (a kind of smelt), pearl oyster, etc., and for keeping sardine, kuruma ebi (a kind of shrimp), and other sea fish, sea cucumbers), and sea is expected to increase the output considerably.

Eggs of salmon and trout are artificially hatched in 64 stations in Hokkaido and several other prefectures in Japan, and each year about 90,000,000 infant salmon and trout are turned loose to assist nature in increasing their stock. The pearl oyster industry started from 1891-2 in the Aga Bay in Miye Prefecture. It has now achieved success and the value of cultured pearls exported has reached several hundred thousand yen. Another pearl culture station has been opened in the Omura Bay, in Kyushu.



CORAL FISHING.

The fact may be added here that in Formosa, there are 25,000 natives engaged in the nursery industry, the yields amounting to Yen 810,000. There are a few Japanese also who are engaged in the industry there.

MANUFACTURES FROM FISHERY PRODUCTS.

With the development and improvement of the means of communication, the market in Japan for fresh fish has been extended. At the same time the manufactures from fishery products have increased year by year, until in 1916 they reached Yen 63,990,000, an increase of 50 per cent. over five years before. Sardine and herring have been used mainly for fertilizer, but in recent years some people planned to salt them and export them to China.. The industry has not as yet been sufficiently developed. The cooking or drying of sardines, with the progress and application of science, the improvement of pots and furnaces, and the method of manufacture, has been greatly advanced in quality and cost. The manufacture of dried bonito has been improved so that the time required for manufacturing has been greatly shortened.



SHELL HUNTING AT HONMOKU BEACH.

The aquatic products manufacturing industry has developed year by year, as shown in the following table of production :—

NAME OF ARTICLE	1916	1909
Iodine	2,995,527	242,789
Iodide of Potash ...	1,634,940	502,984
Shell Buttons	4,847,479	1,476,630
Kanten	1,414,784	1,531,532
Canned Fish	1,840,217	1,981,032

The importation of iodine and iodide of potash from abroad has now altogether ceased. The manufacture of shell buttons has developed remarkably in recent years. The material for the shell buttons, beside trachus and others secured in Japan, is imported also from Singapore, South Sea islands, the Philippines, and America. Kanten is being

exported abroad in ever increasing amount, with the result that the sea weed from which it is made is becoming scarce, so prosperous is the industry. Various kinds of fish are canned, such as crab, sardine, trout, salmon, turbo, kamaboko (Japanese fish cake), hokki gai (another Japanese food), etc., the value being Yen 3,000,000. Associations at the places of production and of exportation have begun to test the products to improve the quality of the goods exported.

In the Russian coast provinces, the entire yields from fisheries are turned into manufactured articles. The value of production has reached Yen 7,000,000. Lately red salmon has been prepared for exportation to compete with the American articles. In Karafuto (Sakhalin) the value of production was Yen 8,300,000 in 1916.

EXPORTATION OF AQUATIC PRODUCTS.

The exportation of aquatic products has increased rapidly in recent years. In 1915 the value was Yen 34,830,000, an increase of 100 per cent. over five years before. About 41 per cent. of the goods were exported to China, 30 per cent. to Europe, 13 per cent. to the South Sea islands and America, and the rest to other countries.

Of the various articles exported, the most notable increase has been made in the case of salted trout and canned crab. Canned crab is taking the place of canned lobster, and has been exported to America from 1908 in increasing quantity. Canned red salmon which is manufactured in Kamchatka has been exported to Europe since 1911.

The effect of the outbreak of the European War in August, 1914, has been felt most in the case of coral, fish oil, and shell button for Europe; canned crab for America; and for China, the rise of silver causing the exportation generally to decrease. In 1915, the exportation of shell buttons improved as did kanten (Bengal isinglass), iodine and canned fish. In China, not only because of the effects of the war, but also because of the boycott and other obstacles in connection with the Sino-Japanese negotiations, the trade in highly valued marine articles received a serious blow.

IMPORTATION OF AQUATIC PRODUCTS.

The total importation of aquatic products was valued in 1916 at Yen 3,310,000, an increase of more than 30 per cent. over five years before. This increase was due to the increase of importation of material for shell buttons. Generally speaking, the importation of aquatic products has been steadily decreasing. In addition to the material for shell buttons, the most notable increase of importation was in the case of salt, which amounted in value to Yen 2,447,569, whereas in 1910 it was only Yen 244,973. This was due to the increase in the demand for salt as material for manufacturing industries.

FISHERY ADMINISTRATION.

The fishery administration pertaining to general affairs is conducted by the Imperial Fisheries Bureau of the Department of Agriculture and Commerce. This Bureau is subdivided into two sections, "Fishery Administration" and "Fishery Industry," the former taking charge of regulations and associations, while the latter looks after the promotion of fishery interests by encouragement and improvement of fishing enterprises.

Besides the Central Government, the prefectural governments look after the fishery interests of their respective localities.

The administration of the salt monopoly is carried on by the Monopoly Bureau of the Department of Finance.

In the Imperial colonies, such as Korea, Formosa, Karafuto and Kwantung, the colonial governments under the governor-generals or civil governors, look after fishery interests.

The Development of Manchuria

Authoritative Reports by Officials of the Chinese Maritime Customs

The economic welfare of Manchuria will always prove of great interest to trading people as well as to those whose view of national development is confined to political phases for the simple reason that the region owes its advancement to international activities, and has possibilities of becoming a bone of contention of some size in the future. While the development of Manchuria was originated by Russian enterprise, credit must be given to the Japanese for the consummation of the schemes which have placed the territory upon a substantial productive basis. Prior to the Sino-Japanese war of 1894-5 the great spaces were practically unproductive and the mineral deposits were virtually untouched. That conflict resulted in Japan securing a definite footing in South Manchuria, and the Russo-Japanese war, which was fought over the richest part of the country, ended in the consolidation of Japanese interests in the South and gained for her the right of wide expansion in the North. The efforts made by American statesmen to neutralize the territory failed, and Japan has been able to demonstrate her ability to develop the region in an ordered way. No broad-minded observer withholds testimony in this regard, though some of the methods adopted by Japanese "colonists" have at times been open to severe criticism.

Attention is again directed to the potentialities of Manchuria and the excellent work for which Japan has been responsible by the issue of the "Return of Trade and Trade Reports of 1917" concerning the Chinese northern ports in which the Chinese Maritime Customs has jurisdiction. This set of reports by trained men constitutes an instructive compendium which should be studied by all interested in the development of China and contiguous territories, not only on account of the statistical and general information it affords but because of the light which emerges from between the lines.

The reports all lay emphasis on the successful productive nature of Japanese effort, and this, if it does nothing else, should serve to stir the conscience of the indifferent Chinese official whose callous disregard of the national welfare has been solely responsible for the loss of China's grip on Manchuria, Korea, Mongolia and Tibet in particular and the precipitation of the provinces of China Proper in general into the vicious slough of despond in which they are now so hopelessly wallowing.

The Commissioner of Customs at Mukden, in his contribution, points out that though political events are beyond the scope of his report, mention, nevertheless, deserves to be made of the exchange of notes which took place in 1917 between Japan and the United States of America, defining their policies in regard to the Far East, guaranteeing, among other things, the integrity and "open door" of Manchuria.

Commercially, as is generally the case, Japanese interests date further back than the political happenings, he explains, and, in view of the greatly increased Japanese activities during the year, recalls Japan's intimate relations with the marvellous growth of trade and prosperity in South Manchuria. This, he says, as is well known, has as its base the abundance of agricultural wealth produced from a virgin soil by a steady flow of hardy Chinese immigrants. It dates

back no more than 30 years. And at the moment when there was superabundance of supply there arose in Japan a great demand for the staple productions.

The discovery of the Japanese market for beans and beancake was the most potent factor in the development of trade in South Manchuria. Ever since the Japanese have laboured incessantly for the development of the resources of South Manchuria. The results, great as they appear to others and as compared with other parts of China, have yet confessedly been a disappointment to the Japanese themselves.

ADMINISTRATIVE REFORMS.

It has been officially stated that with a view to bringing about better results, and also to carrying through the provisions of the Sino-Japanese Treaty of 1915, from none of which as yet any benefit has been derived, the so-called "Unification of the Japanese Triple Administration in Manchuria" has been effected. By the "Triple Administration" is understood the Government of the Kwantung Leased Territory, the South Manchuria Railway Company, and the Japanese Consular authorities in South Manchuria.

The Consuls, directly subordinate to the Foreign Office in Tokio, had jurisdiction over the Consular and Municipal police in the Japanese Settlements, outside, be it noted, of the parts of the Settlements situated within the area of the South Manchuria Railway Company, where the company maintained its own regulations, police, and military guards; the Japanese post offices in Manchuria were a law unto themselves under the direct jurisdiction of the Kwantung Government; in Manchuria, as in the Leased Territory, the Kwantung Government had no direct influence over the South Manchuria Railway Company, with its highly placed President, which was subject to the final authority of the Japanese Government Railways Administration in Tokyo.

Small wonder, therefore, that the interests of so many bodies, albeit all animated with the best intentions to push Japanese interests, have on occasions clashed and retarded the common object in view. The reforms which have been effected will have an important bearing upon the future of Manchuria. They are as follow:—

- (1) The constitution of the Colonial Board in Tokyo, under the supervision of the Prime Minister of State, for the management of affairs concerning Chosen, the Kwantung Leased Territory, and the South Manchuria Railway Company.
- (2) The delegation of the protection and control of the railway track and area in Manchuria and of the control of the working of the South Manchuria Railway Company to the Governor General of the Kwantung Leased Territory.
- (3) The appointment of the army officer in command of the Gendarmery in South Manchuria as Director of Police as well, under the orders of the Governor General of Kwantung.
- (4) The provision that special appointments as Consuls and Vice-Consuls may be given to the high executive officers of the Kwantung Government or to Japanese with special knowledge and experience of matters Manchurian.

- (5) The handing over of the management of the Government railways of Chosen to the South Manchuria Railway Company.
- (6) The enlargement of the scope of the Oriental Colonisation Company so as to embrace Manchuria and Inner Mongolia (the company lends money on the security of real estate to Chinese and Japanese alike and will be able to finance Japanese colonists wishing to settle in Manchuria).
- (7) The official recognition of the Bank of Chosen as the Japanese Government Bank in Manchuria, with sole right to issue gold yen notes (this right was formerly enjoyed by the Yokohama Specie Bank; the change has necessitated the taking over of many of the latter's branch offices in Manchuria by the Bank of Chosen; the object of the move, besides rendering better financial support to Japanese in Manchuria, is stated to be the quickening of the adoption of a gold standard).

The importance the Japanese attach to the changes is evidenced by the fact of Baron Y. Nakamura, the President of the South Manchuria Railway Company, having been appointed Governor General of the Kwantung Leased Territory, with the special mission to carry the reforms into practice. In a communication to the Press upon taking up his new appointment His Excellency, commenting on the changes as outlined above, summed up his policy by stating that every bit of energy would now be directed towards the opening up of Manchuria by the mutual co-operation and trust of the Japanese and Chinese.

The Commissioner of Customs at Dairen (Dalny) referring in his report on the administrative changes alluded to, says that they were effected by a Japanese Imperial Ordinance dated July 31, 1917, and explained that thereby the Governor General of Kwantung was placed under the direct supervision of the Prime Minister, instead of the Foreign Minister as hitherto. As regards matters concerning diplomatic affairs, however, he came under the Foreign Minister. The Governor General was vested with direct control of the working of the South Manchuria Railway, instead of merely supervising it. The Consuls in Manchuria were placed under the supervision of the Governor General. Simultaneously with the reform in government organization, changes in the *personnel* of the principal officials of the Kwantung Government General and the South Manchuria Railway Company took place. General Baron S. Nakamura was released from the Governor Generalship, and Lieutenant-General Baron Y. Nakamura, who was relieved of the post of President of the South Manchuria Railway, succeeded him. Mr. T. Shirani, who served as Civil Governor for many years, was transferred to the Tokyo Government as chief of the newly established Colonial Board, and Mr. S. Miao, formerly in the service of the Government General of Formosa, was appointed in his place. The Presidency and Vice-Presidency of the South Manchuria Railway Company were abolished, and the post of Director-in-Chief was created, Dr. S. Kunisawa, ex-President, being appointed to this new post.

IMPORTANCE OF RAILWAY DEVELOPMENT.

The most important factor in furthering Japanese interests is the powerful South Manchuria Railway Company, says the Commissioner at Mukden, not only on account of its great resources and official status, but also on account of the national sentiment which attaches to it, which has found its expression in the saying that the company's main capital consists of "the ruddy stain of the blood of Japanese heroes."

Its business ramifications extend to every field of Japanese activity in Manchuria. The year will mark a

turning-point in the history of the company. The entire railways of Korea have been placed under its management; and during the year arrangements have been completed which, from the 1st January, 1918, will place the management of the Kirin-Changchun and Shihpingkai-Chengchiatun Railways as well in its hands.

This has been effected in return for loans advanced to these two Chinese railways by Japanese on the security of the property and income of the railways. During the terms of the loans, which are to run for 20 years, the Japanese will manage the railways, but the Chinese may appoint a director to supervise their affairs. It is further stipulated that if in future the Chinese Government desires to extend the railways or to construct branches and requires funds for such purpose the Japanese shall have a preferential right to supply them.

By all who have travelled over the lines of the South Manchuria Railway Company, with its first-class up-to-date service and equipment in such marked contrast to those of the connecting railway systems to the north and west, it will be readily conceded that the arrangements spell great improvement.

The Shihpingkai-Chengchiatun Railway extends from the former place, an important mart and station on the South Manchuria Railway, in a north-westerly direction for 53 miles to Chengchiatun. Work on the railway was commenced in the spring and, in spite of being hampered by floods in August, was completed before the end of the year. The line runs over flat country, and the only difficult piece of engineering encountered was the construction of the bridge across the Upper Liao River at Sankiangkow. The bridge has 167 piers, and, for financial reasons, is built of wood, with the exception of a span of steel truss, 60 feet long, in the middle, and one, 30 feet in length, on each side.

The line will tap an exceedingly fertile district and may be regarded as the first section of a railway that will stretch far into Inner Mongolia. The official opening will not take place till April next (opened officially on July 1—Ed. F.E.R.); but already, before the end of 1917, trains ran twice daily from both end stations and traffic at once assumed considerable dimensions. The winter 1916-1917 was the coldest in man's memory. In January hundreds of railway cars had to be withdrawn for repairs, owing to the damage caused to the wheel axles through the freezing of the lubricating boxes and consequent ignition.

Commenting on the same subject the Commissioner at Dairen (Dalny) says:—The Chosen Railway authorities' scheme for attracting the freight of Japanese imports to Manchuria to the peninsular route and Dairen's opposition to it have already been commented upon in past successive years' reports. An important event took place in 1917 which turned the wheel in favour of Dairen. The amalgamation of the Chosen Railway management with that of the South Manchuria Railway, by which the construction, maintenance, and working of the Chosen Railways were entrusted by the Chosen Government General to the South Manchuria Railway Company, took effect on the 31st July. The two railways are now under one management, and the conflict between them has been done away with. A revised Kirin-Changchun Railway Agreement was concluded between the Chinese Government and the South Manchuria Railway Company on the 12th October. By the new agreement the amount of the loan is increased from Gold Yen 2,150,000 to 6,500,000, and the South Manchuria Railway Company assumes the management of the line on behalf of the Chinese Government. The director is to be appointed by the Chinese Government, and the chief engineer, traffic manager, and chief accountant are to be selected by the company. The construction of the Shih-Cheng Railway was completed

on the 30th November, only eight months from the commencement of the work in April. This short line of 55 miles connects Chengchiatun, or Liaoyüan, with Shihpingkai, on the South Manchuria Railway, and forms a part of the projected line to Taonan. It is a Chinese Government railway, but its chief engineer and traffic manager have been selected by the South Manchuria Railway Company from among its officials, by virtue of the loan agreement. The crippled state of the goods traffic on the Chinese Eastern Railway, as mentioned in the report for 1916, has continued throughout the year. On the other hand, imports destined to Harbin and Russia through this port increased, owing to the congestion at Vladivostok; and in order to prevent the accumulation of north-bound goods at Kwanchengtze, the South Manchuria Railway was obliged to place a restriction on the quantity of goods forwarded to places on the Russian line. This caused a congestion in Dairen of goods destined to Harbin and beyond, and such goods had to await their turn for several weeks before they were forwarded.

The transfer of the Korean lines to the management of the South Manchuria Railway Company caused readjustments at Antung, the Customs station on the Manchuria side of the Yalu River, which constitutes the border between Manchuria and Korea. The Commissioner of Customs there, in alluding to this, says: The year 1917 was also a year of change, and two familiar institutions, the Chosen Government General's Railway Office at the Antung station and the Yokohama Specie Bank, handed over their work, the former to the South Manchuria Railway Company, which has always co-operated with it locally in the matter of through traffic to Korea, and the latter to the Bank of Chosen.

The friendly and considerate treatment experienced by all at the hands of their representatives called forth general expressions of regret at their departure, but at the same time the community had the pleasure of welcoming known successors.

The former change was almost an inevitable development in view of the large and growing traffic carried, since the building of the Yalu Bridge, by one continuous line from Changchun, in North Manchuria, to Fusan, in East Korea, and no doubt unification of administration will redound to the advantage of both the railway company and the public.

In these war years of shortage of shipping the railway connection with Japan has, of course, been of especial advantage, and Manchuria has been kept supplied with commodities that she requires.

It is interesting to note that three great trade marts—Shanghai, Hankow, and Osaka—are connected with Mukden, the centre of Manchuria, by lines of communication of practically equal lengths—Shanghai to Mukden, 1,259 miles; Hankow to Mukden, 1,271 miles; and Osaka to Mukden, 1,216 miles, including 122 miles of connecting sea route taking some 11 hours to cross.

In the absence of published statistics it is impossible to judge to what extent Shanghai, Hankow, and Tientsin meet the demands of Manchuria with goods of Chinese make forwarded by rail, yet it is reasonable to presume that such goods would only form a small proportion of what comes into Manchuria from Japan, as even if continuous and quick transit were assured, inland taxes and high rates of railway freight would at present effectually prevent competition with Osaka.

As an illustration of comparative expenses stated as having been incurred on sending a carload of timber from Antung to Tientsin by the Japanese-owned Antung to Mukden and the Chinese-owned Mukden to Tientsin line, the following figures may be quoted: from Antung to Mukden (170 miles) by the South Manchuria Railway the

charges worked out at Haikwan (Custom) Taels* 0.158 per mile; from Mukden to Tientsin (435 miles) the charges came to Haikwan Taels 0.378 per mile. In these years of lack of shipping it would obviously be to public advantage everywhere if railway freights could be made as low as possible and facilities extended as far as possible.

Another new line of railway in Korea, destined to have an important bearing on the development and control of Northern Manchuria (alluded to in F.E.R. July number—Ed.) was opened on November 25, 1917, between Seishin on the coast of Korea, and Kainei near the Manchurian border. This line is 58 miles in length and will eventually be linked up with Gensan and the main Korean railway system by a line to be built in 1918. It will also be connected eventually with the line to be built from Kirin as an extension of the existing Changchun-Kirin railway. (See sketch in July issue—Ed. F.E.R.).

Commenting on the Seishin-Kainei railway the Commissioner of Customs at Lungchingsun, a city in the district influenced by this line, writes that immediately upon being opened to traffic it caused a substantial reduction in the freight rates between the two connecting towns, and added: Throughout the year the extremely limited means of communication in the district seriously hindered the growth of trade, and the crying need of the moment is a railway or even a trolley line to link up with the Korean railways just across the frontier.

The cost of cart hire to convey a picul of grain over the 40 miles to Kainei became equal to the steamer freight for the same cargo over the 1,069 miles that separate Seishin from Kobe. In the spring the cost per picul for cart hire varied from 58 to 65 sen, but in the autumn, when there was a very strong demand to convey beans or wheat, competition among the local merchants forced the price up to Yen 2.15 and over per picul. The dearth of carts was accentuated in July by the withdrawal of all the pack-animals, about 300 in number, engaged in the carriage of cargo to and from Seishin, owing to the muleteers having made contracts at very favourable rates to carry copper from the Kapsan mine in Korea to the seacoast. High freight rates caused a considerable extension in the use of the Japanese parcel post service for the importation of cargo. An additional incentive to this mode of importing goods is provided by Article XVIII of the Parcel Post Agreement with Japan of 1910, whereby Customs duty under half a tael is not collected unless two or more parcels containing similar merchandise are sent from the same sender to the same addressee and received by the same mail. This article makes the evasion of legitimate duty a simple matter. The number of incoming parcels increased from 12,000 in 1916 to 20,000, and their value, from Yen 85,000 to 171,000.

The prosperity of this district depends almost entirely on the harvest, he says, for agriculture is the main support of the people, as there are no industries, except those of a primitive nature that satisfy the simple local requirements; and although the country is rich in minerals, mining is as yet still in its infancy, but developments in this direction may be expected before long.

To people living under such circumstances the main prerequisites are favourable weather and freedom from the tumult and confusion arising from political strife. As these conditions obtained, to a large extent, during the year, the result is seen in the exceptional prosperity, limited, unfortunately, only by the lack of better means of communication.

* One Haikwan (Customs) Tael in 1917 was equivalent to 4s. 3½d., English money; \$1.03, U.S. currency; 5.94 francs, French money; Yen 1.98, Japanese money; \$1.63 Mexican dollars current in China.

A cry for better means of communication is raised by the Commissioner of Customs at Hunchun. Whenever, and if ever, normal and favourable conditions prevail, he writes, better commercial results may confidently be looked for; but trade cannot develop or revenue increase to any material extent unless—as stated in all previous reports—improvements are made to roads, means of communication, and banking facilities, while his colleague the Commissioner of Customs at Newchwang comments adversely on the operation of the Peking-Mukden railway. In this connection he says:

While local shipping facilities have much improved, thanks to the good work done by the Liao River Conservancy, it is to be regretted that the Peking-Mukden Railway has not yet seen its way to give at least as good a service between this port and the main line at Kowpangtze as the South Manchuria Railway offers on its branch line to Tashihkiao. The latter line, though its terminus is situated on the same side of the river as the town, has a commodious receiving establishment in the native town and accepts responsibility for all goods entrusted to its care; it has a good and adequate supply of rolling-stock and provides tarpaulin covers for open wagons; freight by this line is also exempt from taxation and examination.

On the Peking-Mukden line cargo is liable to be held up *en route* by the tax offices; and if it is not possible to exempt such cargo from taxation, it would not seem difficult to arrange that the charges be collected in one sum. The Yingkow station is on the north bank of the river, and no cargo is accepted unless brought to the station, so that a receiving office in the town would be a great boon. Again, the passenger ferry conveys passengers only to and from the jetty situated near the foreign residential quarter; and a call-station for the ferry near the Native Customs, some 1½ miles to the west and opposite to the railway station, would seem an obvious and called-for improvement. No responsibility is taken for goods, and this, together with the possible delays *en route*, make it advisable that agents accompany their cargo. The passenger cars are old, badly kept, and insufficient; and the train service, consisting of two trains leaving in the morning and returning in the evening, is slow and unpunctual. Since this section is remunerative, there seems no reason why improvements should not be introduced.

IMPROVING AGRICULTURE.

Although the established railways do of themselves make for tremendous agricultural improvement the South Manchuria Railway Company has not allowed the matter to rest there. It has enlisted the services of Japanese agronomists to teach the farmers how best to develop the productivity of their land and improve their crops. In this connection the Commissioner of Customs at Mukden states that the South Manchuria Railway Company maintains several experimental farms scattered along the company's lines. Under expert supervision they achieve many results which are bound to influence agriculture in Manchuria beneficially. Mention may be made of the superior results obtained from the raising of beans by means of careful selection of seed beans; of the use of the artificial manure which is now produced at the company's Fushun factories; and of experiments with the cultivation of various kinds of fruits, tobacco, hemp, sugar beet, etc.

As an instance of the practical utility of the experiments conducted by the company stands the large South Manchuria Sugar Refining Company that was established at Mukden in December, 1916, with a capital of Gold Yen 10,000,000.

The company is Japanese, and the South Manchuria Railway Company is the moving spirit in the enterprise. The company's business is based on the production of sugar

from beet, the profitable cultivation of which has been proved by the Railway Company's experimental farms. Official Chinese support was enlisted to induce the farmers to take to beet cultivation. Seeds were distributed gratis, and tickets in a lottery distributing money prizes from silver Yen 1,000 down to Yen 5 were given to the farmers in the proportion of one ticket for each *hsiang* of land sown with beet seeds. In addition, minimum earnings were guaranteed the farmers, an arrangement which was the envy of many tillers of the soil in the spring when drought threatened ruin to all the crops. In the end the beet crop turned out well, and the conversion of the "most conservative class of a conservative race" to beet growing may be said to have been effected. Extensive refineries have been erected in the Mukden Railway Settlement. Sidings connect them with the railway station. As an indication of the magnitude of the operations contemplated by the new company it may be mentioned that the refineries are built to dispose of 500 tons of beet per day. They started work in December last with a total crop estimated at 400,000 piculs, sufficient to keep the refineries going for a month and a half only. As a beginning this was not considered bad; and the percentage of sugar obtained—13 per cent.—is looked upon as distinctly good. A difficulty to be overcome is the developing of a taste for this sugar among the native population of Manchuria and Shantung, the prospective markets for the company's products. The Chinese are accustomed to cane sugar and will not, it is thought, take readily to a new article. To begin with, therefore, crude cane sugar from Formosa will be mixed with the beet sugar, the percentage of the former being gradually diminished as the new sugar gains in popularity. The future of this company will be interesting to watch.

In connection with the bean trade there have been several attempts to corner the market in Manchuria, and the Commissioner of Customs at Dalny briefly alludes to them in the following comments:—

Exciting bean campaigns on the local Staple Produce Exchange, which caused the market to fall into disorder and hindered export trade for several months, are worth describing. The bean market, which showed signs of animation in April, 1917, was stimulated by the activity of the bean oil market and the paucity of goods arriving from the interior, coupled with a poor estimate of the new crop. The quotation for future goods, which was already as high as Silver Yen 4 per picul in May, quickly rose to Silver Yen 4.50 in June, and Silver Yen 5.50 in July, and soared still higher, the market being artificially inflated by shrewd manipulators. The amount of contract deals reached a total several times as large as the combined amount of the stock in Dairen and the goods which could be expected to arrive from the interior by the time of delivery. The Exchange management, alarmed by this state of affairs, used all means at its disposal to suppress the buying craze. The business on the Exchange was suspended repeatedly, heavy additional guarantee money was called up from the buyers, and no effort was spared to make the dealers agree to the cancellation of outstanding deals. Still the buying craze did not abate, quotations reaching as high a figure as Silver Yen 6.65 towards the end of August, when the Exchange was again suspended for an indefinite period. It was not until October that business reopened, the market having recovered its equilibrium, owing to the appearance of the new crop of beans. In the meantime difficulties in connection with the settlement of the transactions concluded gave rise to disputes between buyers and sellers, which, coupled with further complications caused by a large percentage of the stock becoming unfit for delivery through rain damage, culminated in a lawsuit involving an enormous sum of money. It was

not until February, 1918, that the affair was amicably settled by arbitration, thanks to the good offices of the Kwantung Government.

INDUSTRIAL AND MINING DEVELOPMENT.

Railways and good roads do not merely contribute to the improvement of agricultural resources in Manchuria. Railways have already given a tremendous fillip to the development of industries and mines, in which direction the South Manchuria Railway Company has laid itself out to afford the fullest encouragement in many ways.

Above is noted the establishment of a beet sugar industry, and in previous issues of this "Review" have been described in some detail the iron mines of Penchihiu and the coal mines at Fushun, as well as other enterprises.

Many bean oil mills have been erected in recent years, and with regard to the oil trade in 1917 the Dairen Commissioner says: The export of bean oil amounted to 1.7 million piculs, *i.e.*, 525,000 piculs more than the record figures of 1916. The export to Europe almost ceased, owing to the dearth of ships and to high marine risks, but the shipment to America was four times as much as that of the previous year. The demand in that country was almost unlimited, and local oil mills were pressed with orders and worked at high pressure—so much so that it caused the over-production of beancake, which filled all available warehouses on the wharves, and in March and June quarters mills were compelled to restrict their output.

He also remarks that as there was no hope of the cessation of the European war in the immediate future, various industrial enterprises which had been temporarily postponed were undertaken, and the building of factories, offices, and residences was in full swing everywhere in the Kwantung Territory and in the railway areas, in spite of the greatly enhanced cost of materials.

The Commissioner at Antung bears testimony to the increasing importance of that place as an industrial centre. Antung itself has, he says, also been steadily growing and prospering, and in looking back on the year 1917, when it entered on its second decade, one feels it has also entered into a new stage of expansion. With coal and iron mines in easy connection, and copper and perhaps other ores available, with wild silk, timber, beans, corn, kaoliang, millet, and rice at hand, enterprise only is required to make it a thriving industrial town. It is to be hoped, too, that some day expert supervision of afforestation and cocoon-raising will be undertaken and further increase its prosperity. That possibilities are realized by Chinese and Japanese merchants is evidenced by new factories that have been started or projected in 1917.

Several new silk filatures were built, chiefly by Chefoo merchants, and towards the end of the year there were some 4,500 reel-stands owned by Chinese, producing silk of filature grades, as against some 2,600 in 1916. An interesting point is the shift of the main market of Antung silk to Japan—in the December quarter three-quarters of the silk production was shipped to Japan and a quarter to Chinese ports, the proportions in previous years being the reverse. It appears, therefore, that the tendency of Antung is to become a centre whose production of silk will be more or less regulated by foreign demands, and that local prices of silk will become more and more closely influenced by the important market of Yokohama. The demand for silk in Japan is still rapidly increasing, especially for the purpose of manufacturing pongee for use at home as well as for exportation to America and Australia. Given a Japanese demand, cheap railway freights and the one-third duty reduction privilege enjoyed by goods entering and going out of Manchuria by rail make the direct export to Yokohama preferable to exporting to

Shanghai. The following charges, taken according to rates prevailing at the same date, bring this point out: the cost of sending 100 catties of wild silk to Shanghai by steamer direct came to Haikwan Taels 8.71, and via Dairen, to Haikwan Taels 5.85, whereas to Yokohama the total charges came to Haikwan Taels 3.16.

In addition to the new silk filatures, there were also erected the Okura Smelting Works, the Ando Silk Spinning Factory, and the Koyama Match-stick Factory, and during 1917, too, the port had the pleasure of seeing a steam-launch of 33 tons register and two ocean-going sailing vessels or cargo-boats of about 80 and 180 tons being built and completed at the Takami Shipbuilding Yard, and two more cargo-boats, of 180 tons each, commenced.

There are now in Antung 14 Chinese-owned and one Japanese-owned beancake and oil mills, nine Japanese-owned sawmills, three Japanese-owned works for iron sundries and five for cleaning rice.

The Yalu Timber Company has completed the excavation of 176,184 square feet of canal for receiving timber, as timber-felling in the Yalu forests is being carried out on a much extended scale, presumably in anticipation of increasing demands expected in view of shortage of tonnage for importations of Hokkaido and American timber. The Japanese Settlement is well served with excellent water by the South Manchuria Railway Company's waterworks, and both Chinese and Japanese towns are served by the company's electric light department.

A new import from Korea noted by the Antung Commissioner is that of 39,711 piculs of dye-leaves. They are the leaves of a maple tree (*acer ginnala*), widely distributed in Korea, and the item first appeared in our returns in 1916, when some 9,700 piculs were imported. They yield a black dye known to Chinese of old, but little attention was paid to this dye-stuff when European chemical dyes could be easily had. Chinese dyers call the dye *shan ch'a* and it is said to be principally used by them for developing black colour over a preliminary ground of indigo blue. Besides jet black, experiments have proved it capable of yielding deep metallic blue and also grey to cotton materials, and the yellow colouring matter which it contains in small quantities can produce a kind of khaki colour on cotton and woollen materials. The colours obtained are fair in their tones and durable.

Of minor industries opened at Mukden during the year, writes the Mukden Commissioner, may be mentioned the lactic acid factory, a Japanese company with the support of the South Manchuria Railway Company, for the improved manufacture by modern apparatus of lactic acid, a by-product of *samshu* making; a glue factory (Japanese) for the manufacture of glue from animal bones and hides; and the Manchuria and Mongolia Chemical Industry Company (Japanese), for extracting gelatine and oil from linseed, peanuts, and apricot stones.

MINING.

After referring to the importance of the development of the Fushun and Penchihiu mines the Mukden Commissioner points out that the mineral regions which are fast developing into a great industrial centre, are bounded by the Anshan mountains, in the Liaoyang prefecture, on the south, Penchihiu on the east, Fushun on the north, and the South Manchuria Railway on the west. By singular good luck the regions abound in coal, iron, and limestone in close proximity and have a plentiful supply of water. The possibilities of this happy combination are vast.

Of the new undertakings the Anshan Steel Works take rank as the most important. The experience of the Great War has changed the old dictum that the three essentials

necessary to win a war were "money, money, and money." Steel is the requisite nowadays, and without steel a modern country simply cannot exist. This gives to the new steel works a political as well as a commercial importance. The works, construction on which is being pushed forward with the utmost vigour, are situated within the railway area at the Lishan station, on the South Manchuria Railway, south of Liaoyang. An indication of the size of the steel works is furnished by the fact of the company having to provide housing accommodation for 5,000 Chinese and 2,000 Japanese workmen. Operations will commence in 1918 and are based on an annual production of 160,000 tons of steel. A whole new town is growing up around the new works. The iron mining area, some 10 miles in extent, is found conveniently near by. The mining of the iron ore has already commenced in earnest by the Anshanchan-Chenhsing Mining Company, a Sino-Japanese undertaking, the Japanese half of which is represented by the South Manchuria Railway Company, which is under contract to deliver its entire production to the Anshan Steel Works.

Of this new enterprise the Dairen Commissioner says: The initial outlay on this undertaking is estimated at Gold Yen 30,000,000, and the work will extend for three years. An extensive tract of land—about 3,000 acres—is being opened up for sites for various establishments, as well as the workshop colony which is already beginning to spring up.

The export of minerals from Newchwang—writes the Commissioner at that port—which, before it was practically stopped by lack of tonnage, formed an important branch of the exports from Newchwang to Japan and Chinese ports, is certain to be resumed on even a greater scale. How important the outlet through Newchwang is to the Japanese interests which control the mines may be gauged from the fact that Fushun coal can be laid down in Japan 90 sen cheaper when shipped via Newchwang than when sent through Dairen.

The Commissioner at Lungchingsun reports that the reopening of the Tienpaoshan mine has been an unqualified success for the exploiters, and a rich vein of copper has been struck. Electrical machinery has been installed and the establishment enlarged, so as to augment the output five-fold. Lack of suitable means of communication somewhat hampers the development of this mine, and it is, therefore, hoped that the construction of a trolley line from the mine through Lungchingsun to the Tumen River will be realized in the near future. The permission of the Chinese Government is alone lacking for the execution of the scheme.

HARBOUR AND RIVER IMPROVEMENTS.

In the way of harbour construction and improvement the following work was accomplished during 1917 at Dairen:—The construction of the No. 3 (new) Pier progressed well, 17.9 per cent. of the work having been executed during the year, and the remaining portion is expected to be finished by April, 1920; the work on the North and the West Breakwaters, and the reclamation of the shore to the east of the No. 1 (East) Pier, progressed to the extent of 4 per cent. and 3.3 per cent. respectively, and both undertakings will be completed by April, 1918. The dredging operations progressed by 1.7 per cent., leaving 14.2 per cent. to be finished by April, 1919. The Oil Pier in Jijiko, damaged in 1916, has been reconstructed. The construction of the wharf building, described in the report for 1916, progressed well, and the brickwork has been finished up to the first floor. Three galvanized iron covered cargo-sheds, covering a total area of 6,500 *tsubo* (1 *tsubo* = 36 square feet) and a "dangerous goods" warehouse of 320 *tsubo* have been constructed.

At Newchwang, reports the Commissioner, excellent progress has been made in the Liao River Conservancy work, and the fruit of the labour is already seen in a very perceptible increase in the depth of the channel between the port and the bar. The training-wall on the east side, which will eventually close the East Channel, now extends from near the East Spit Beacon to the Fairway Buoy, a distance of $3\frac{3}{4}$ miles, although for some 3,200 feet it is not up to finished height. While this does not yet entirely close the East Channel—as the work was retarded towards the end of the season by a falling off in stone deliveries,—it has reduced the entrance to this channel from the Liao to less than one-third of its former width, and stone has been deposited across the open portion in line with the training-bank to prevent scour during the winter, which might have impeded the work during next season. In the fairway the scour has already increased the depth of water between the outer and inner buoys by from 1 to 3 feet. This deepening by scour will be much accelerated after the construction of the west training-bank.

It is unfortunate that similar progress cannot be recorded in the work on the Upper River, as the funds provided are quite inadequate for obtaining the requisite dredger and plant to undertake operations on a scale which will have any permanent result.

The vital necessity of improving the Upper Liao cannot be too strongly insisted upon: however important the deepening of the bar may be, a deeper channel at the mouth will be of little use if the upper reaches remain blocked and grain-boats are unable to bring produce to the port; whereas the depth of water on the bar is practically the same as it was 20 years ago, the channel above, which formerly gave free passage to 12,000 bean-boats, is now so silted that the 1,000 boats now employed in the grain trade have the greatest difficulty in surmounting the shallows.

The silt-laden Liu River, which enters the Liao near Sinmin, seems likely to increase the conservancy problem of the province. This river has raised its channel above the adjacent country and in flood slips off its raised bed and forms a new channel and covers the low-lying land with silt. This happened in the summer, and the village of Hwangkipu and some square miles of fertile country were in one day buried 10 feet deep. This bed of silt is ever enlarging and advancing: a few years ago it reached the railway, and being thereby impeded conditions became aggravated, to the great loss of the farmers and the railway—the latter raising its track year by year at considerable expense. The railway embankment is naturally regarded as a welcome protection by the districts south of the line; and these have opposed the construction of bridges to permit egress of the water, and such bridges as have been made have not alleviated the position north of the railway.

Investigations should be made to ascertain whence the silt comes, if anything can be done to prevent it coming down (*e.g.*, by afforestation), or in the meantime to prevent the Liu from continually changing its course and submerging tracts of country (*e.g.*, by providing it with a fresh route and a dyked channel to the Liao); also to ascertain what effect on the Liao the silt would have if brought direct or if allowed gradually to advance as it does now. It is of the utmost importance not only for the farmers and the railway but for the future of the port that the problem be seriously tackled as a whole by competent authorities appointed by the Government and that some definite action be taken.

The July supplement to the North-China Hong List for 1918, has been published in the usual form with some additions of names and firms.

Japan's Development of Iron

Resources in Korea and Manchuria and Future Prospects

The Japanese have for many years been drawing parallels between their geographical position and that of Great Britain and have made a close study of the secrets of the latter's success in trade, in colonial control, in manufactures, in shipping and in all other lines in which the British have been conspicuously successful. A well defined attempt has been made as a result of these comparisons and studies to take advantage of Britain's centuries of experience and to emulate British methods. A hitch in these proceedings of course came when it was realized that a great part of Great Britain's success could be attributed to her metal resources and her development of them. The building of a big merchant marine, of highly developed internal communications, of great manufactories and the accumulation of munitions of war entails the use of vast quantities of coal and iron. If a nation is to develop along these lines and survive crises and tests such as the present war in Europe that nation must have sufficient iron and coal to be independent of supply from other quarters. Great Britain has stood the test and has, therefore, survived four years of strain, which would have been impossible had she been forced to rely upon as scant a native coal and iron supply as Japan possesses.

Although Japan's poverty of mineral resources was recognized before the war and although some effort was made to acquire iron and coal holdings elsewhere, the war, with its various embargoes and its published records of the vast quantities of metals used in new manufactures and by the armies in the field, has set the Japanese to work with feverish energy developing what metals they have in their own islands, and in their colonies and protectorates, and acquiring special concessions and privileges in the mining areas of China. They realize that if they are to maintain the position of a first class power, won through their victory over Russia, and that if they are to compete industrially with other peoples, as England has always succeeded in doing, they will have to develop huge mineral fields in the shortest possible time or abandon all hope of achieving anything like the "splendid isolation" of Great Britain.

In the development of Manchuria, where Japan has been fairly free to work without arousing the animosity among the Powers which greets her invasion of other parts of China, the South Manchuria Railway has been the medium and the enterprises of this company are fostered with particular care when they have to do with the production of coal or iron or with the transport and manufacture of metals. Last year the South Manchuria Railway Company placed Yen 1,200,000 on its budget to cover the initial expenses of establishing an iron foundry at Lishan, which will ultimately cost Yen 30,000,000 and as a result of a recent inspection of this foundry site and of a prospective iron mining field at Anshantien, two officials of the Imperial Railway Board, Mr. Suzuki, an engineer, and Mr. Goshima, counsellor to the Board, have prepared an exhaustive report upon the iron industry in Manchuria and Korea and also upon the possibility of Japan's future independence in the production and manufacture of iron and steel.

By way of calling attention to the need of a study of the iron problem, these two officials preface their report with statistics showing the increased consumption of iron in Japanese manufactures as compared with the output and they

then contrast Japan's output and iron manufactures with those of other nations. Their figures are largely taken from a report of the Iron Foundry Investigation Society and are undoubtedly sufficiently disconcerting to those Japanese who believe that all civilizations, and particularly their civilization, power, prosperity and prestige, are founded upon mining and metals.

It is argued, for instance, that since the demand for pig iron increased from 59,996 tons in 1903 to 224,309 tons in 1913, the demand, which has been growing proportionately, will be 360,900 tons this year and 533,800 tons in 1923. The demand for steel in 1903 was 286,479 tons and in 1913, 748,056 tons; while the estimated demand for this year will be 1,113,086 tons, and in 1923 1,568,000. These figures do not include the tonnage of imported steel manufactures such as ships, machinery, railway cars and engines which formerly averaged about 92,000 tons a year. It is believed that including manufactured imports the demand for steel in Japan will be 2,193,800 tons in 1923.

Against these figures the officials of the Railway Board estimate that the output of pig iron and steel in Japan and Manchuria in the various existing works is as follows:

Yedamitsu Iron Works (steel)	...	281,977 tons
Kamaishi (pig-iron and steel)...	...	57,425 "
Wanishi (pig-iron)	...	29,970 "
Sennin	...	3,796 "
Kuriki	...	2,857 "
Penchihi	...	45,000 "
Total	...	423,025 tons

This total is something less than a quarter of the estimated demand for 1918 and when these figures are contrasted with those which the Japanese officials produce for America and other countries, using statistics as old as those of 1913 and 1914, they make a very poor showing indeed. The following figures are given in the report:

THE TOTAL PRODUCTION IN 1914.

America	pig-iron	...	30,966,000 tons
	steel	...	24,790,000 "
Germany	"	...	19,300,000 "
	"	...	18,950,000 "
England	"	...	10,480,000 "
	"	...	7,660,000 "
Russia	"	...	4,540,000 "
	"	...	3,960,000 "
France	"	...	5,210,000 "
	"	...	5,310,000 "

THE TOTAL PRODUCTION IN 1913.

Belgium	pig-iron	...	2,500,000 tons
Austria-Hungary	"	...	1,670,000 "
Canada	"	...	1,008,000 "
Sweden	"	...	735,000 "
Spain	"	...	409,000 "
Italy	"	...	373,000 "
Japan	"	...	235,000 "

Commenting upon these figures, the officials of the Railway Board write as follows:

In point of the iron industry and production Japan is far inferior even to Spain or Italy. The importance of home-supply of iron and independence of arms and ammunitions supply have been earnestly advocated for a long time by military officers and those people who are inspired by an economic Imperialism. The present great European War, which has given various lessons to Japan, has made the Japanese awake and realize the urgent necessity of a home-supply of iron. Stimulated by these, every organization has been expanded and iron work enterprises in the interior, Chosen and Manchuria, have become prosperous. The time is now mature for them to see to the development of the iron industry. We will report the present condition of some of the chief iron works.

GOVERNMENT IRON FOUNDRY AT EDAMITSU.

Production: 650,000 tons per year.—The second extension having been almost completed in the fiscal year of 1916, the Edamitsu Iron Foundry is now capable of producing 350,000 tons of steel per year. Since the outbreak of the present European War, the great increase in demand for iron and the shortage of freight have made iron importation from foreign countries difficult and at the same time the home demand for iron has greatly increased. The present unsatisfactory state of the iron supply has prompted this foundry to increase the output of iron by as much as 650,000 tons; and in the 37th session of the Diet, convoked in 1916, a bill for an expenditure amounting to Y.34,515,450 for the third extension was submitted and passed, and the construction work, commenced in 1916, is now going on. Construction will be carried on for six consecutive years ending in 1921 when the work will be completed. The total expenses of the prospective construction are estimated at Y.92,880,000. 300,000 tons of ore are to be bought each year from the Tayeh Iron Mine, (China) at Y.2.00 per ton delivered at the mine, estimated approximately at Y.7 per ton delivered at Edamitsu, including the freight and other charges.

With the increase in transportation capacity brought about by the improvement of the Tayeh Railway, the iron supply will be increased by 50,000 tons per year. From this source the Japanese Government Iron Foundry will be able to buy 500,000 tons yearly. Although the ore mined at the Tsaining and Yinli mines, which belong to this foundry, are transported to the plant at Edamitsu, the foundry relies for its home ore supply upon the Akutagawa mine of the Mitsui.

KAMAIISHI MINING COMPANY.

Annual production: 155,000 tons.—This mine, which had once been operated by the Government Iron Foundry, has steadily developed, since it was transferred to the possession of Mr. Chobei Tanaka. The Iron Foundry was recently organized into a company with a capital of Y.20,000,000, of which Y.10,000,000 was already paid up. The output of pig-iron was 35,216 tons and that of steel 22,209 tons in 1916, whereas, now that the construction for expansion of the foundry has been completed, 230 tons of ores are produced per day, the annual output being 120,000 tons.

It is expected that a 120-ton furnace of the Cowber (?) type will be in working order in 1919. When this furnace is completely fitted up, this foundry will be capable of producing 440 tons of pig-iron per day, 155,000 tons annually. The ores contain 60 per cent. iron, and the total presumable quantity of the ores in this mine is estimated at 30,000,000 tons. Pig-iron is manufactured here by using charcoal or coke as fuel, and a distinction is made between the products of the two processes, charcoal pig-iron being superior in quality and therefore being used for manufacturing arms for the Navy and the Army.

HOKKAI IRON COMPANY, LTD.

Production: 90,000 tons.—The Hokkai Iron Company, Ltd. became independent in February, 1917. It had formerly been called the "Wanishi Iron Works" at Muroran port and had belonged to the Hokkaido Colliery and Steamship Company.

This company was formed as a joint-stock company, in cooperation with the Mitsui Company, with a capital of Y.3,000,000. Previously, the company had only one 50-ton furnace fitted up, but it recently was decided to secure two more 100-ton furnaces. One of them, already completed, is now in operation, and the other was installed in May, 1918. When the construction of these two furnaces has been completed, they will produce 250 tons per day, the annual output being 90,000 tons.

At present the company is using native coke, and iron ores produced in the mines at Tayeh (China), Chosen, and Abuta in Hokkaido.

SENNIN IRON COMPANY, LTD.

Production: 4,000 tons.—The Sennin Iron Company, Ltd. is at Iwasaki Village, 12 miles west of Kurosawajiri, Iwate prefecture. The foundry is controlled by a joint-stock company under the management of the late Keijiro Ameno-miya's heirs. As the pig-iron of this company, smelted with charcoal, contains little sulphur and is very superior in quality, it is supplied to the Naval Arsenal and the Military Arsenal at Osaka. The annual production is reported to be 4,000 tons in round figures. The ore from this mine contains from 40 per cent. to 50 per cent. of iron and the estimated total deposit is reported to be 850,000 tons.

KURIKI MINE COMPANY.

Production: 2,500 tons.—The Kuriki Mine Company, with its capital of Y.200,000, is at Kurikisawa Village, Kisen-gori, Iwate-ken, Japan. The daily production is 7 tons, or 2,500 tons a year. The fuel used is charcoal. The manufacture of 100 per cent. pig-iron requires 200 per cent. to 250 per cent. ores and 120 per cent. charcoal. Such being the case, the manufacturing capacity will not be increased unless charcoal is amply supplied. The pig-iron produced here is good in quality and is especially used for chilled castings. The mineral quantity of the ores is 50 per cent., and the total deposit is estimated at about 700,000 tons.

PENCHIHU MINES.

Mr. Suzuki and Mr. Goshima give a long account of the organization and workings of the Penchihi Colliery and iron foundry, which we omit, since the facts are identical with those given in an article on Penchihi which appeared in the January, 1918, number of the REVIEW.

ANSHANCHAN IRON WORKS.

Production: 150,000 tons.—This plant manufactures both pig-iron and steel. The site of the works is in the vicinity of Changchiapu which is three miles south of Lishan Station on the main line of the Manchurian Railway. This Company has bought 1,600,000 *tsubo* of ground for the site of the foundry, and 2,000,000 *tsubo* for streets and houses.

The houses, engineering offices, and warehouses which were temporarily built on the ground belonging to the Ryusan Stations to prepare for the building of the foundry were recently completed. Therefore, the Lishan Building Service Department and Ansantien Preparation Department of this Iron Works have removed their offices to the above-mentioned buildings. The ground-leveling has been completed, and a few thousand employees

are now busy at work constructing the foundry here. The building for furnaces and coke ovens is now under construction. The ovens will be built of fire-proof brick.

Most iron mines are in the vicinity of Ansantien Station or to the south-east of the station, and for transportation facilities a light railway will be constructed. The water used by the foundry is to be drawn from the River Chienshan, and if the water runs short, the River Tatsuho will feed the former river through iron tubes stretching 15 miles.

Lishan is situated 196 miles from Dairen port and 59 miles from Yingkow. Access to either of the ports is very easy. There have been many discussions regarding the proper location of an iron foundry. Some have insisted that an iron foundry should be established at an iron mine, and others prefer the vicinity of a coal mine. The Edamitsu Iron Works decided to establish its foundry at its coal mines, while the Anshanchan and Kenjiho (?) Iron Foundries built at their iron mine.

This Iron Foundry is different in its organization from the Penchihu Colliery and Iron Foundry. The latter is a Sino-Japanese co-operative concern in all its business, from mining to manufacture, while in this foundry the mining work is jointly Chinese and Japanese, but the iron

Kamada have charge of negotiating with other companies and with private interests. The head bureau of mining is at Anshanchan and Mr. Kido, engineer and chief of the geological investigation bureau of the South Manchuria Railway Company, is adviser. Mr. Kido has been lately appointed in charge of general affairs and mining business, thereby filling the vacancy caused by the dismissal of two clerks of the same Railway Company. The appointment of the officials of this company is not officially announced as yet, but when the iron foundry is completed and when ore is actually in sight, the official appointment will be published.

CHINESE MINES.

The total iron deposits in the mines which are now being worked in China are estimated at 700,000,000 tons. The chief deposits are as follow :—

Magnetite and hematite at Tayeh in Hupei	200,000,000 tons.
Limonite at Taochunchow in Anhui	... 50,000,000 "
Iron ore at Chinlingchen in Shantung	... 120,000,000 "
Hematite at Anshanchan	... 200,000,000 "
Magnetite at Penchihu	... 80,000,000 "

There are many other unworked mines in China. The mine of Anshanchan consists of eight districts covering the



JAPAN STEEL WORKS, BOKAI, MURORAN, HOKKAIDO, JAPAN.

manufacturing is undertaken by the South Manchuria Railway Company alone. The ore mining and the purchase of ground required for mining are under the management of the Japan and China Iron Ore Mining Corporation, the establishment of which was authorized by the competent authorities in the name of Mr. Kanchukwan (?), a Chinese, and Mr. Yasuke Kamada, official of the South Manchuria Railway Company. All the ore produced here will be bought by the Railway Company which will manufacture the iron. This organization is far superior to that of Penchihu.

This iron enterprise is a realization of the mining rights in Manchuria stipulated in the Chino-Japanese treaty of 1915. This is the first fruit of the treaty. When the Anshan mine was discovered in 1909, the mine was so poor that no one dreamt of the ore at this mine being used as iron materials in the near future. The invention of a new separating method and the great European War have emphasized the urgent necessity of self-sufficiency in supply. At the same time the experience and ability in manufacturing iron of Gen. Nakamura, Governor General of Kwantung, have been of value in stimulating the iron manufacturing industry.

The Chenhsing Company has borrowed from the South Manchuria Railway Y.140,000 for its capital and is now prospecting for the mine. The actual mining will be commenced in the coming autumn. The head office of this company is in Mukden, and Mr. Wuchunghan and Mr.

area of 2,640,000 *tsubo*, and the quantity of minerals existing above the horizon is estimated to be :—

West and east of Anshanchan	... 94,000,000 tons.
Takushan	... 37,800,000 "
Hsiaolingtzu	... 1,600,000 "
Tiehshishan	... 200,000 "
Kwanmenshan	... 12,500,000 "
Yingtaoyuan-Wanchiapa	... 500,000 "

At first the quality was thought to be 35 per cent. or 40 per cent., but later ores containing from 45 per cent. to 60 per cent. were discovered at Tosan, Anshanchan and Takushan when the mines were prospected. The annual output of pig-iron at these mines is estimated to be over 1,000,000 tons, so although excavations have been made on a large scale, the life of the mines will continue more than 80 years. The poorer ore will be run through a magnetic separator like that of Penchihu. The invention of this separator has greatly advanced the progress of the iron manufacturing industry in Manchuria.

The coal used at Anshanchan is produced at Penchihu and Kaiping as well as at Fushun, but in course of time Fushun coal only will be used. At first it was thought that the coal of Fushun was unfit for making coke, so it was considered unsuitable for manufacturing iron. However, after repeated studies and investigations into the coal from every colliery, some coal produced here proved to make good

coke, and is now in no sense inferior to the coal of Hokkaido. The lime produced at Penchihiu and Yentai is transported to Anshanchan, but in time the foundry is going to use lime produced at Liaoyang and its vicinity.

The construction appropriation is Y.30,000,000. Of this Y.8,000,000 will be spent upon the equipment required for pig-iron working and the incidental works for the first period and the construction works which were commenced in March, 1918. Two furnaces are to be fitted up in the course of this year. It is estimated that the annual production of pig-iron will be 150,000 tons. For the purpose of producing in future 1,000,000 tons (manufactured iron, 800,000 tons), 1,600,000 *tsubo* of ground have been bought for the site of the plant. The remaining Y.22,000,000 is to be spent upon the establishment of a steel foundry, so that machines of several kinds and tools for railway use may be manufactured from 130,000 tons of steel per year to meet demands in Manchuria and the interior of China. Every preparation for making steel is expected to be finished in 1918.

The plan for the first period includes the installation of two furnaces and the daily production of pig-iron amounting to 460 tons. The following items show the detail of the plan:

- (1) The initial expense is estimated at Y.8,200,000, of which Y.200,000 is for purchasing the ground. The balance invested will be refunded in twenty years, redeeming Y.241,751 per year.
- (2) The floating capital is Y.1,500,000. The interest on this sum is estimated at Y.150,000 a year, the rate being 5 per cent. per annum.
- (3) Profit and loss account:—Receipts:—Y.5,161,200. Pig-iron, 156,400 tons, Y.51,612,000, the price being Y.33 per ton for delivery at Osaka. As the daily output of pig-iron is estimated at 460 tons, the annual production will total 156,400 tons, supposing the working days of a year to be 240 days.

The chief items of disbursement: The expense of manufacturing 156,400 tons of pig-iron, freight to Osaka, importation tax, expenses of building, sinking fund and interest on floating capital.

The total sum of the above-mentioned expenses is Y.4,426,860.

- (4) Net profits:—Y.734,340, or about 9 per cent. per annum upon a capital of Y.8,200,000.

These estimates were prepared in October, 1916, when the price of iron was low, but to-day it has gone up and, therefore, the figures cannot be taken as they are. The construction works will also require a larger appropriation than that of the estimate.

MITSUBISHI KENJIHO IRON FOUNDRY.

Production: 100,000 tons.—A little more than 8 miles along the railway from Kosu Station on the Seoul-Wiju line is Kenjiho Station. By going along the Daidoko River about 30 miles one reaches Pengyang. On the lower reaches of this river, 18 miles from Pengyang, there is situated Chinnampo, which is a deep and suitable port for the anchorage of a vessel of 4,000 tons. When a railway was constructed for the transportation of materials to be used for constructing the Seoul-Wiju Railway and an iron foundry was established, this town Kenjiho became widely known. Iron ore and coal are produced everywhere near this port. The foundry avails itself of the river for its transport.

The Mitsubishi Company has bought at Kenjiho ground covering 400,000 *tsubo* for the building of an iron foundry. The company will be engaged in refining all the ores produced at the mine in Kokaido. It set to work constructing the foundry, May, 1917. A furnace, completed recently, has been in operation since January of this year.

The transportation of ore is dependent upon the Daidoko River, and upon a light railway, seven miles long, newly constructed between the mine-plot and the foundry. Building materials, iron manufacturing materials and manufactured iron will in future be carried by this river. To realize this plan the company has been improving a part of the harbour to facilitate the unloading of building materials and coal.

The Mitsubishi would go a step further and build moorings for ships of 4,000 to 5,000 tons, but the water of the river is so muddy that diving work is very difficult, and in consequence no definite plan of improving the harbour has yet been devised.

According to the investigations made by the Chosen Government it is said that Kokaido is richly endowed with iron mines, and the authorities are now encouraging iron manufacturing enterprises. In fact all the well-known mines in this district are now being worked. Among them there are the Sainei, the Inritsu and the Angaku.

Iron ores produced in the plain at Kenjiho and its neighbourhood are hematite turned yellow by oxidation on the surface. Hematite ore can be collected like potatoes by digging into the hills or fields. One cubic *tsubo* of ground contains one ton of ore, quality of which is 50 per cent., the presumptive total production of ore being 2,000,000 tons. The original plan of the Mitsubishi Company was to instal two 150-ton furnaces and to manufacture 300 tons of pig-iron per day with a capital of Y.10,000,000, but owing to the shortage of steel materials since the outbreak of the present war, and especially of ship-building materials, the company has been obliged to commence the manufacturing of steel with an additional capital of Y.10,000,000 to meet the urgent demand of the Mitsubishi Shipbuilding-yards. Such being the case, the company, it is said, is extending the manufacture of materials for shipbuilding so as to supply all the dockyards of the company.

As 200,000 tons of ore are required to produce 100,000 tons of pig-iron, the whole deposit of 2,000,000 tons of ore in the mines will be exhausted in ten years. Therefore the company previously determined to buy ores from other mines in Kokaido to supply its own needs for the first ten years and to keep its own mines untouched as long as possible. The expenses amounting to Y.20,000,000 for the construction of the iron works is to be repaid in this way; 30 years from now the iron manufactured will be a net profit. It is further planned that ore produced at Chinlengchan, Shantung, will be used by this company and that the ore of the company's own mine in Kankyodo, which is boundless in its supply, will be transported when the Heigen Railway is opened for traffic.

It was first planned to use the Heigen coal as fuel, but investigation proved that this kind of coal is of no use in the manufacture of iron. It is said, therefore, that the Mitsubishi is now contemplating the use of Kaiping and Kontan coal, 700 tons of which will make 400 tons of coke.

As the manufacture of a ton of pig-iron requires two tons of ore, one ton of coke and half ton of lime, it is necessary to have 400 tons of coke to produce 300 tons of pig-iron per day. The coke furnace at this company's works is of the newest type in the East, and is called Otto's Furnace. The patent right of it was obtained in Germany, but it was constructed in America. This furnace wastes no heat and is so constructed as to be capable of producing by-products such as pitch, tar and benzine oil by its own heat. The construction of a furnace of this kind costs Y.3,000,000.

OKURAGUMI'S HIROSHIMA IRON FOUNDRY.

Production: 10,000 tons.—The foundry is situated in Ogata and Otake villages in Saeki-gori, Hiroshima-ken. It was commenced May 5, 1917. The authorized capital of the foundry is ¥2,350,000. It will manufacture charcoal pig-iron from the ores sent from the mine at Penchiu and will supply material for the special steel required by the Naval Arsenal at Kure. The annual production is 15,000 tons, the daily output being 20 tons. To produce the quantity desired 500 *kwan* of charcoal is required, which will be supplied by the western part of the mainland of Japan, Shikoku, Kyushu and Kamchatka.

The above-mentioned foundries have already started their business or have partly completed their workshops and are to be soon operated. We shall now describe some other iron manufacturing concerns which will shortly commence construction works.

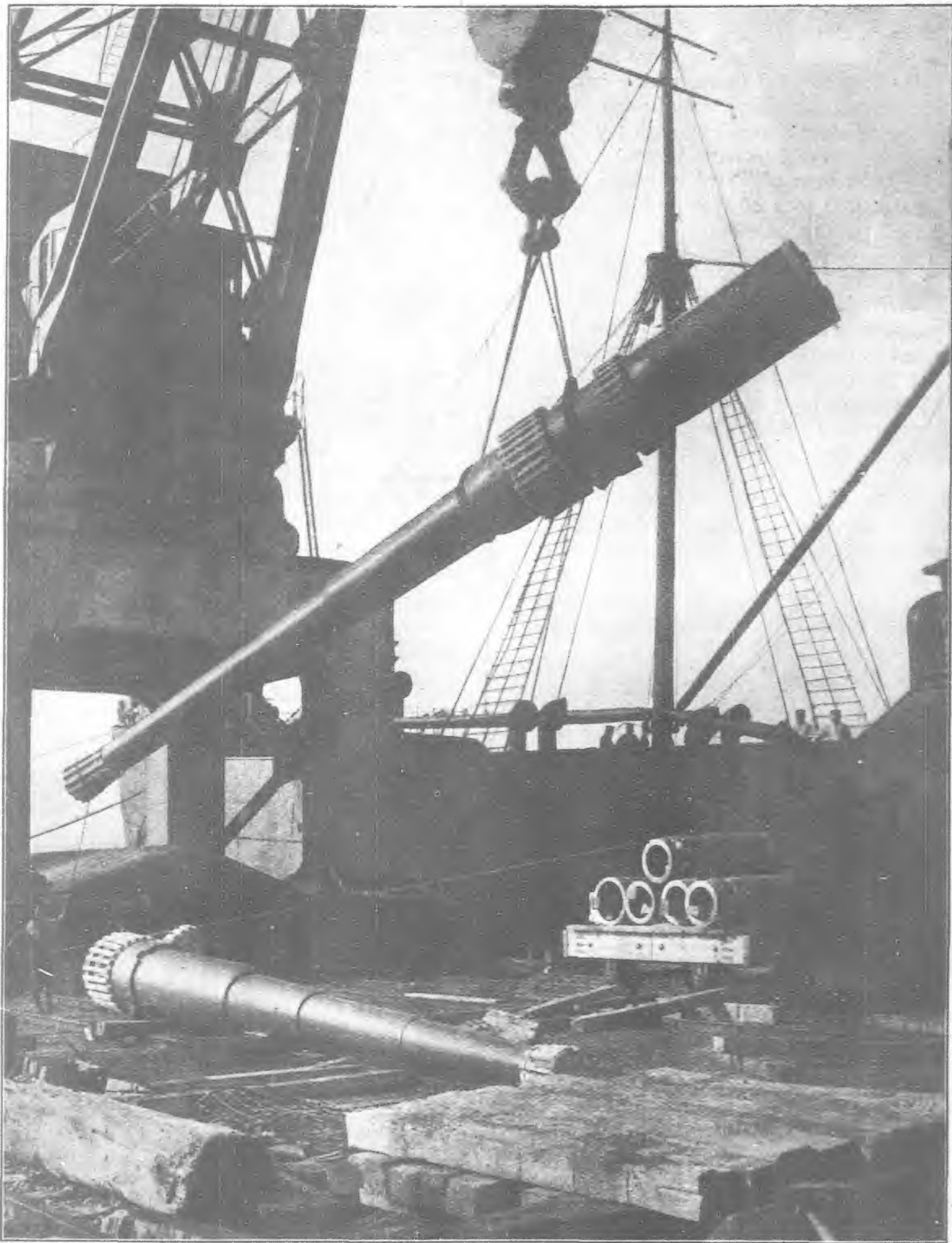
TOYO IRON FOUNDRY COMPANY.

Production: 150,000 tons.—Having realized the importance of iron manufacturing from the national point of view, a number of the most eminent persons in financial circles are now establishing this iron company. The following facts are said to give an idea of the organization:

1. ¥30,000,000 is to be invested as capital.
2. Two 250-ton furnaces are to be constructed and fitted up for producing 150,000 tons of pig-iron from 300,000 tons of ore each year. Pig-iron is to be made into steel.
3. Iron ore is to be purchased from the iron mine at Taochungshien, the rights having been obtained by a certain Japanese. A provisional contract for the purchase has already been signed.
4. The foundry is to be established in Kyushu. Eight graduates in engineering from the University have been sent to the Edamitsu Iron Works to study iron manufacturing at first hand.

The Taochung mine is situated near the Yangtze River about 30 miles from Wuhu, Anhui, China. It is called Chanlungshan and stands 350 metres above the bank of the river. This mine was discovered by a Chinese merchant of Wuhu 8 or 9 years ago. A company called Yufen was formed with a capital of ¥30,000 to carry on iron manufacturing, but it was not successful and came to a standstill. Later on the Mitsui Yoko entered into a lease

contract with the China-Japan Company and has bought all the output of the mine under a 40-year agreement. The mining was begun in September last year, and a few Japanese engineers staying there are engaged in testing the ore. A railway reaching to the river is being planned and will have a gauge of 3 feet 6 inches. It will be 5 miles and 15 chains long.



SHIPPING 14-INCH GUNS MADE BY THE JAPAN STEEL WORKS BY A 100-TON CRANE.

The ore is to a great extent composed of limonite, the quality being superior to that of Tayeh ore. The total presumptive amount of the ore is believed to be 50,000,000 tons. The annual output, it is calculated, will be 300,000 tons, all of which is to be sold to the Toyo Iron Foundry, according to contract. The ore produced here will command a ready sale to some other companies before the opening of the Toyo Iron Foundry, so the construction of the foundry

is steadily in progress. In the event of transporting ore from this mine to Japan, the ore sent to Japan will no doubt contribute a great deal to the iron manufacturing industry. It is very satisfactory to have such a rich mine, for the future of the Tayeh Mine is uncertain.

CHINO-JAPAN IRON CORPORATION.

Steel Production: 50,000 tons.—Mr. Keichiro Yasukawa is the promotor of this corporation. An iron foundry is to be built on the sea shore at Kurosaki, Fukuoka-ken, on a tract of 130,000 *tsubo*, which has yet to be purchased. At the outset, Mr. Yasukawa bought an iron mine in Chosen in order to start a pig-iron industry, but he changed his plans and is now said to have taken an initial step in the purchase of 60,000 tons of Tayeh pig-iron. He is going to manufacture 50,000 tons of steel out of the pig-iron purchased from Tayeh.

HANYEHPING COAL AND IRON COMPANY.

Production: 400,000 tons.—The Iron Works at Hanyehping is the pioneer in the East, and it owes its establishment to the far-sightedness of Chang Chih-tung. The foundry has an old furnace and a new one. The old one is capable of working up to 100 tons per day, while the new one can turn out 200 tons. The output of iron in 24 hours is 350 tons. Of this output 200 tons are manufactured into steel by means of a convertor and the rest is sent to the Edamitsu Iron Works. It is said that two 400-ton furnaces are to be constructed and erected on 750,000 *tsubo* of land near the Yangtze-kiang. Dr. Oshima and 14 engineers have come to China to make every preparation for the enterprise. The furnaces will be operated toward the end of 1918. They will be able to produce 280,000 tons of pig-iron per year.

Iron imported into Japan from Tayeh totals 60,000 or 70,000 tons each year, including the iron sent to the Edamitsu Iron Works. When the next extension is made 60,000 tons will be sent to the Yasukawa Steel Foundry. The total annual importation will be 120,000 to 130,000 tons.

The ore mined at Tayeh contains 63 per cent. of iron, which is hematite. The total deposits in the mine are 200,000,000 tons. The daily production is 1,800 tons. 320,000 tons of the annual output is supplied to Japan and 280,000 tons are sent to Hanyang where the ores are to be made into iron. In three years 1,500,000 tons will be mined. Then the supply to Japan will be increased by 50,000 tons per year. The maximum supply to be made to Japan will be 500,000 tons. This company owes Y.27,840,000 to Japan, and, according to the contract, the iron ore and pig-iron sent to Japan are accepted as payments upon the debt.

In addition to the foundries already listed, both Japanese and Sino-Japanese, there are a number of minor works such as the Kuhara Iron Works, now amalgamated with the Toyo Iron Foundry, the Asano Electric Iron Foundry, the Nippon Steel Company, the Kobe Steel Foundry, the Sumitomo Steel Casting Company, the Nippon Steel Works and the Tokyo Steel Material Company. All are producing steel manufactures of some sort, but have no special relation to the question of the home iron supply. The following table shows the total amount of iron which, it is hoped, will be available to Japan in 1923.

Edamitsu Iron Works	...	...	650,000 tons
Kamaishi	...	...	155,000 "
Hokkaido Iron Foundry	...	...	90,000 "
Sennin	...	...	4,500 "
Kurikisawa	...	...	2,500 "
Penchihu	...	...	100,000 "
Anshanchan	...	...	150,000 "

Kenjiho	...	...	100,000 tons
Okuragumi, Hiroshima	...	...	15,000 "
Toyo Iron Works	...	...	150,000 "
Yasukawa Iron Foundry	...	...	50,000 "

The increase is great when compared with the tonnage in 1916, which was only 420,000 tons, but when we compare this total amount with the prospective demand in 1923, which it is estimated will be 2,190,000 tons, the supply will still be inadequate and 727,300 tons will have to be found somewhere. In China and Manchuria many mines are left untouched. The foundries which have already been established have much margin for improvement and further extension.

Baron Sakatani and China

Baron Sakatani, upon his return from China, delivered an address at the Tokyo Chamber of Commerce Hall, the occasion being a reception held in his honour. Several leading business men of Tokyo and elsewhere were present, including Mr. B. Nakano, Mr. Soichiro Asano, Baron Kamakichi Nakajima, Mr. Manzo Kushida, Mr. Tatsukuro Inouye, Mr. Kinryo Ito, while the Tokyo Chamber of Commerce was represented by Mr. Fujiyama, president, Mr. Sugiwaru, vice-president, Mr. Kyohei Magoshi, Mr. Yushin Fukuhara, Mr. Iwao Matsukata, Dr. Takuma Dab, and other members. Baron Sakatani made a complete report of what he had seen and noted during his trip in China, largely repeating what he said before in his addresses, press interviews and conversations in China and elsewhere. He emphasized the fact that he did not go to China as a representative of the Japanese Government, but went solely at the request of the Chinese Government. When he made that point clear to the Chinese, they understood him and ever since regarded him as a friend of China. He reiterated that China required to be financially reorganized, even from the point of view of the peace of the Far East, to say nothing of the need of it for China's own welfare. The currency system was so much disorganized that it was an urgent necessity to restore it to order.

The Tokyo *Asahi Shimbun*, in an article, stated that European and American countries had now come tacitly to recognize the fact that the position of highest financial adviser to the Chinese Government, which had been held by men like Professor Jenks, Mr. Vissering, etc., rightly belonged to the Japanese. The reason why Baron Sakatani's visit to China attracted so much attention among foreigners there was not only because the Baron was a recognized authority on financial matters, but mainly because the position offered to him will have very important bearings upon future developments.

After recounting the difficulties which lay before Baron Sakatani if he is to undertake the task of reforming the currency system in China, the editor said that it is a condition of Baron Sakatani's acceptance of the position that the currency system be made a separate institution like the maritime customs or the salt gabelle, and that he be given authority, as the supervisor of the system, independent from the general administrative and financial control of the Chinese Government. The editor wants to know how such a thing as making the currency system a separate institution can be accomplished. Any reform that may be made in China should be made after peace, order, law, and justice are restored normally in that country.

The Loan Craze in China

List of Financial Transactions Made Between Chinese and Japanese

So much anxiety has been expressed both by Chinese and foreigners with regard to the ultimate result of the seemingly reckless loan contracts recently made with various Japanese financiers, and so many wild rumors have been afloat as to the nature and amount of such loans, that we append a list of the transactions so far known to have been concluded. We give in this list, for the sake of record, all loans so far known to have been made by Japan in connection with Chinese interests. Rumor has listed several not given here. We prefer to omit these until we have reliable information that they have been concluded. Among such is the loan for \$8,000,000 said to have been contracted by the South with the Kuhara interests during the anti-monarchical rebellion in 1915-6 on the security of copper mines in Yunnan, and a few other transactions said to have been entered into with Japanese by the Southern leaders at various times since 1911.

Popular anxiety has been aroused more during the past year solely on account of the fact that moneys raised have been employed, not for industrial development, but for the financing of the Northern forces against the South. Were the loans strictly controlled and used solely for economic betterment in China no-one would raise a protest, but because the funds are dissipated almost as soon as secured alarm is felt not only in Chinese and foreign circles, but also among thinking Japanese. Baron Sakatani was so impressed with the dangers ahead in this direction that he did not hesitate, and has not ceased, to utter warnings to his countrymen.

Nor has the comment failed to reach the Japanese Government. In order to disperse rumors the Japanese Finance Department recently published a list of loans made by Japan to China from the advent of the Terauchi Ministry in October, 1916, to June, 1918, and these were acknowledged to total some Yen 102,700,000. To this have to be added the loans made since June. They include the officially acknowledged Kirin Forest loan of Yen 30,000,000 and the third advance of Yen 10,000,000 on account of the second reorganization loan, which brings the total to some Yen 142,700,000 up to the middle of July.

Various negotiations such as the proposed loan on the Wine and Tobacco Tax and the Peking-Mukden Railway, are said to have been suspended owing to the popular clamor, the protests of others interested, or for some unannounced reason which dictates prudence at this period.

Officials in the Chinese Ministry of Finance complain that the Japanese loan propositions, including those consummated, those about to be consummated, and those proposed but not dealt with, are so numerous and cover such a great field of securities that it is impossible to keep them all in mind or in order; so they are no better off than the general public, which has a new loan report or a new loan rumor served up to it by the vernacular press each day.

Each of these is something of a shock to the conservative and exclusive Chinese people, but as the shocks succeed each other in such rapid succession the public faculty which responds to them is benumbed, and only in a few particular cases has there been anything like a popular demonstration or a protest from provincial officials.

The rumored scheme for the erection of a Japanese steel mill at Fenghuangshan, near Nanking, and for the joint Sino-Japanese operation of the valuable iron deposits at that place, elicited from a congress of representatives of 15 Provincial Assemblies a long appeal to Sir John Jordan, Doyen of the diplomatic corps in Peking, and a similar appeal to the officials and people of China, in which the unconstitutional character of loans negotiated by individuals in the Government, without parliamentary or other authority, was dwelt upon at some length.



TSAO JU-LIN, ACTING MINISTER OF FINANCE

The Kirin-Heilungkiang forestry loan for Yen 30,000,000, which is said to have been concluded between the Japanese three-bank group and Minister of Finance Tsao Ju-lin, July 3, has prompted the people of Kirin to much more passionate protests and demonstrations. When the first reports of the loan, for which the mines and forests of two provinces are said to have been pledged as security, reached Kirin, the people and gentry called upon the Forestry Commissioner and the Military Governor and demanded explanations. As no satisfaction was given, they wrecked and looted the house of the Forestry Commissioner and made away with a number of documents which are said to throw light on other deals with the Japanese. In due course a popular organization set up headquarters in the Provincial Assembly building and sent a delegation to Peking, where the members of the Government were interviewed, coaxed, threatened and showered with tears, until they began to fear the excited Manchurians, when the men responsible for negotiating the loans shut themselves up in their houses, asked for military guards and had the districts in which they lived placed under special military surveillance.

Minister of Finance Tsao Ju-lin, in a message to Military Governor Meng En-yuan of Kirin, makes the frank admission that the series of loans, of which the Kirin forestry loan is one, are being negotiated for the sole purpose of raising money to carry on the government and its campaign against the South, and that they were dubbed "industrial loans" to evade the stipulations in the Government's agreement with the Banking Consortium, which provide that if funds are needed for administrative or political purposes the Group Banks shall be approached first.

While the Kirin folk have been proclaiming their determination to fight the mortgaging of their mines and forests, mass meetings have been held in Canton with the encouragement of Dr. Wu Ting-fang, as a general protest against loans, civil war and the activities of the Northern militarists. Popular knowledge upon the loan question is growing in the provinces and dissatisfaction with the present Government in Peking is growing with it.

Naturally enough the Japanese press have had much to say on the financial policy that should be followed with regard to China. Views differed according to the political policies of the papers, but more active investments in China are advocated by the *Jiji* and *Kokumin*. The foremost rank in Japanese investments abroad, says the *Jiji*, according to the translation of the *Herald of Asia*, should be taken by the investments in China, but the paper is dissatisfied with Japanese inactivity in this direction. As a result of the war, Japanese specie holdings have phenomenally increased. It is a fine opportunity to invest them in China boldly and freely by way of an endeavor to develop the rich natural resources in the neighbouring republic. Since the outbreak of the war, however, Japanese investments in China have totalled only a little over 100 million yen, 20 per cent. of the specie accumulated during the same period. Another matter of dissatisfaction to the editor is that of the late investments in China the larger portions have a political significance, while a mere fraction of them can be regarded as economic loans. In making investments in China, Japan, he says, should aim at the economic development of the two countries. Therefore, the editor attaches importance to economic loans for China so as to open a smooth channel for the exchange of goods and materials.

It is good enough, thinks the *Kokumin*, to invest in China, but it is far better to conduct joint enterprises with the Chinese, for they favor it highly. However, any joint undertaking cannot prosper without due care and effort being exerted. Regarding this delicate affair, the editor admonishes the capitalists in Japan to take a leaf out of the British

notebook. British enterprises jointly managed with the Chinese always flourish, because Englishmen are not given to profiteering only. But joint undertakings between Germans and Chinese usually end in a sorry failure, simply because the Germans sacrifice everything for profits. An eloquent illustration is furnished by the Kaiping colliery which was a losing enterprise under the German management; but began to pay upon its transference to the joint management of British and Chinese capitalists.

The *Asahi* finds fault with the late loans to China on the ground that they will ultimately find their way into the pockets of the Peking authorities and enable them to prosecute the war against the southerners.

The *Yomiuri* compares Japan's attitude toward China with that of the Pan-Slavists toward the Balkans, deploring that Japan is thrusting friendship upon the Chinese without paying due regard to their *amour propre*.

As we go to press the following telegram reaches China from Washington:—"The Government has agreed to a loan by American bankers to China providing China cancels all outstanding loans, and all loans are to be shared by American, British, French and Japanese bankers. The details of the loan have not been completed but fifty million gold dollars is regarded as the approximate figure."

LIST OF LOANS MADE TO CHINA BY JAPAN.

1909	Yokohama Specie Bank to Imperial Railway Administration representing part payment of that part of the Hsinmintun-Mukden Railway lying east of the Liao River. For eighteen years at 5 per cent., issue price 93, secured by revenues of road	Y. 320,000
1909	Yokohama Specie Bank to Imperial Railway Administration for construction of Kirin-Changchun Railway. For 25 years at 5 per cent., issue price 93, secured by revenues of road	Y. 2,150,000
1910	Yokohama Specie Bank to Imperial Railway Administration for redemption of Peking-Hankow Railway. For 10 years at 7 per cent., issue price 97.50 ...	Y. 2,200,000
1911	Yokohama Specie Bank to Imperial Railway Administration for same as above and for running expenses pending redemption. For 25 years at 5 per cent., issue price 95	Y. 10,000,000
1912	Mitsui Bussan Kaisha to Hankow Waterworks and Electric Light Co., for construction purposes, repayable in 10 annual installments. Interests 7 per cent. Guaranteed by Ministry of Communications	Y. 1,000,000
1913	Yokohama Specie Bank to Ministry of Communications for construction of Shih-ping-kai-Chengchiatun Railway	Y. 5,000,000
1915, May 1.—	Asiatic Development Co., Loan to Central Government for general purposes. For 3 years at 6 per cent., issue price 94: secured by uncertain mining concessions in Hunan and Anhui and by profits of brass cash smelting scheme	Y. 5,000,000
1916, Nov. 10.—	*Kuangtung Loan made by the Bank of Taiwan	Y. 600,000

- 1916, Nov. 11.—*Hankow Paper Mill Loan made by the China-Japan Industrial Development Co... Y. 2,000,000
- 1916, Dec. 5.—*Tientsin Spinning Mill Loan made by Okura Gumi ... Y. 600,000
- 1917, Jan. 15.—*Hankow Hydraulic Electric Co. Loan made by Toa Kogyo Kwaisha ... Y. 1,000,000
- 1917, Jan. 30.—Bank of Chosen to Fengtien Province for relief of Chinese banks in Mukden, half payable in one year, half in three. Interest $6\frac{1}{2}$ per cent., issue price 95 ... Y. 2,000,000
- 1917, Jan. —*Japanese Banking Group to Ministry of Communications, for redemption of notes of Bank of Communications, for three years at $7\frac{1}{2}$ per cent. no discount, secured by 1,500,000 shares of Bank Stock and \$4,000,000 Treasury Bonds. Japan obtaining privilege of appointing adviser to bank and action on future loans... Y. 5,000,000
- 1917, Feb. —*Japanese Banking Syndicate to Kuangtung Provincial Government. Y.1,300,000 for advances to provincial government and Y.1,700,000 for construction of Canton cement factory and customs land at Tashaton, and guaranteed by provincial government. Entire loan secured on revenues and property of cement factory ... Y. 3,000,000
- 1917, May 1.—*Kuangtung Loan, Secured by Salt Gabelle Revenues made by Bank of Taiwan ... Y. 1,500,000
- 1917, Aug. 12.—*Nanchang Railway Loan made by Toa Kogyo Kwaisha ... Y. 2,300,000
- 1917, Aug. 28.—Japanese Syndicate to Bank of China, for redemption of Bank-notes, secured by \$15,000,000 Bank of China Notes. For 6 months at 7 per cent... Y. 5,000,000
- 1917, Aug. 28.—*Yokohama Specie Bank advance on Second Reorganization Loan for reimbursement of advances made by Bank of China to Central Government. Repayable out of second reorganization loan: if made otherwise to be repaid in cash in one year. Interest 7 per cent.: discount 1 per cent. Secured by Salt Surplus Revenue ... Y.10,000,000
- 1917, Aug. 28.—*Shantung Loan made by Japan-China Industrial Development Company ... Y. 1,500,000
- 1917, Sept. 28.—*Second Loan for Bank of Communications made by Industrial Bank of Japan, Bank of Chosen and Bank of Taiwan ... Y.20,000,000
- 1917, Oct. 20.—*Loan on Kirin-Changchun Railway by South Manchuria Railway Co. For 30 years at 5 per cent.; issue price 91.50: secured by revenue and property of road ... Y. 6,500,000
- 1917, Nov. 20.—*Grand Canal Loan (part of Siems-Carey loan), made by Industrial Bank of Japan. Of total \$6,000,000 gold Americans take \$3,500,000 and Japanese \$2,500,000 ... Y. 5,000,000
- 1917, Nov. 22.—*Sino-Japanese Industrial Co. and 10 Japanese Banks to Central Government for relief of Chihli flood sufferers. 1 year at 7 per cent. secured by revenue of three native customs houses, including Dolonor ... Y. 5,000,000
- 1917 China-Japan Industrial Development Co., Hengchow, Hunan, Electric Light Co. ... Y. 80,000
- 1917 China-Japan Industrial Development Co., Hsiajen, Chinhai, Hsiaking and Pinghu, Chekiang ... Y. 250,000
- 1917 China-Japan Industrial Development Co., Hsiangtan Electric Light Co. of Hunan ... Y. 150,000
- 1917 China-Japan Industrial Development Co., Metal Refining Loan... Y. 50,000
- 1918, Jan. 1.—*Finance Department, Printing Bureau Loan made by Mitsui Bussan Kaisha. For three years at 8 per cent., issue price 98. Agreement provides that all material shall be bought from Mitsui Bussan Kaisha, if prices are not higher than competitors' Y. 2,000,000
- 1918, Jan. — Mitsui Bussan Kaisha to Tsao Kun, Tuchun of Chihli, for military purposes, secured by shares of Kailan Mining Administration ... Y. 1,000,000
- 1918, Jan. 6.—*Yokohama Specie Bank second advance on Second Reorganization Loan, repayable out of second reorganization loan, if made, 7 per cent. Secured by surplus salt revenues ... Y.10,000,000
- 1918, Jan. — Japanese Syndicate to Tan Hao-min, "rebel" Governor of Hunan, said to be secured by right to co-operation in working iron mines at Taipingshan, Anhui, and antimony mines at Shuikoushan, Hunan, for 5 years at 7 per cent., issue price 94 ... Y. 2,000,000
- 1918, Jan. 18.—Yokohama Specie Bank of Central Government for suppression of plague to be refunded in 10 months, secured by salt surplus ... Y. 1,000,000

1918, Jan.	— Loan to province of Fukien, for general purposes, secured by sundry taxes ...	Y. 1,000,000
1918, Jan.	— Mitsui Bussan Kaisha to Chihli Province for purchase of yarn for Chihli spinners; repayment guaranteed by Ministry of Finance ...	Y. 1,000,000
1918, Jan. 20.	— Tai-hei Kumei Syndicate to Central Government for purchase of arms. Interest 7 per cent., issue price 95: additional commission of 5 per cent. for unspecified purpose ...	Y. 14,000,000
1918, Jan. 20.	— Second Loan to Bank of Communications; three years at 7½ per cent., secured by \$25,000,000 in Treasury Bonds, money advanced by Bank of Chosen, Bank of Taiwan and Industrial Bank of Japan ...	Y. 20,000,000
1918, Feb.	— *Shihpingkai - Chengchiatun Railway Loan made by Specie Bank. For one year at 7 per cent., secured by revenue of road ...	Y. 2,600,000
1918, Feb.	— *Nanjin Railway Loan—Between Nanchang and Kiu-kiang. Made by Toa Kogyo Kwaisha ...	Y. 100,000
1918, April	— Wireless loan, amount not known but probably for construction of wireless stations, materials to be purchased from Mitsui Bussan Kaisha ...	Y. 3,000,000
1918, April 30.	— *Sino - Japanese Exchange Bank to Telegraph Administration for extension of land lines, interest 7½ per cent., discount 1½ per cent.; secured by all telegraph property not previously pledged ...	Y. 20,000,000
1918, May 16.	— *Chihli Provincial Loan made by Bank of Chosen ...	Y. 1,000,000
1918, June 18.	— *Kirin - Huaining Railway Loan by Banks of Chosen, Taiwan and Industrial Bank of Japan, to Ministry of Communications, for continuance of Kirin-Changchun Railway to Korean border. For 40 years at 5 per cent. Advance of Yen 10,000,000 made ...	Y. 20,000,000
1918, April 22.	— *Bank of Chosen to Fengtien Province for redemption of small coin notes, one-half to be repaid in two years, one-half in three, interest 6½ per cent., issue price 95, secured by stock in Penchiu collieries owned by Fengtien Province ...	Y. 3,000,000
1918	— Loan on Yu Kan Iron Mines, Kiangsi Province ...	Y. 3,000,000

1918, July	— Yokohama Specie Bank. Third Advance of the Second Reorganization Loan ...	Y. 10,000,000
1918, July	— Kirin Forestry Loan made by Japanese Banking Group. Period, ten years. Interest 7.5 per cent. To Chinese Government at par. Security: Gold mines and Government forests of Kirin and Heilungkiang, and revenues therefrom ...	Y. 30,000,000

LOANS TO HANYEHPING IRON AND COAL CO., LTD.

1903	Industrial Bank of Japan, 30 years at 6 per cent. ...	Y. 3,000,000
1906	Mitsui Mining Co. Semi-annual repayments, interest 7½ per cent. ...	Y. 1,000,000
1906	Okura & Co., 7 years at 7½ per cent. ...	Y. 2,000,000
1908	Yokohama Specie Bank, 10 years at 7½ per cent. ...	Y. 1,500,000
1908	Yokohama Specie Bank, 10 years at 7½ per cent. ...	Y. 500,000
1909	Yokohama Specie Bank, 10 years at 7½ per cent. ...	Y. 6,000,000
1910	Mitsui Mining Co., 2 years at 7 per cent. ...	Y. 1,000,000
1912	Mitsui Mining Co. ...	Y. 2,000,000
1913	Yokohama Specie Bank, 40 years at 7 per cent. to 7th year thereafter 6 per cent. ...	Y. 15,000,000

* An asterisk marks the loans acknowledged by the Japanese Government from October, 1916 to June, 1918. It must be mentioned that the Japanese Minister in Peking disclaims official knowledge of several contracts concluded.

Dr. Bain on China's Iron.

At the annual meeting of the New York Section of the A. I. M. E. held at the Machinery Club, several well-known authorities spoke on the iron-ore resources of various parts of the world. We learn from *The Mining and Scientific Press* that Dr. H. Foster Bain, who recently carried out exhaustive investigations in China, and is now assistant-director of the U. S. Bureau of Mines, stated that China's resources had been over-estimated; and that, in one instance at least, other minerals had been mistaken for iron ore. He gave a total of 400,000,000 tons available and suitable for modern furnace reduction, and an additional 300,000,000 tons that might be treated by native methods. The deposits are gradually passing under the control of the Chinese government, which has now seen the advisability of modifying the old law that owners of land are also owners of any minerals that may be found underneath. All the iron-ore deposits are controlled by Chinese or Japanese interests; and in this connection Mr. Bain made some interesting comments anent the expansive policy of the Japanese as a nation. In comparing the two principal Asiatic races, China and Japan, he pointed out that, formerly, agriculture was of primary importance; but that the growth of Japan has led to a change in the national character of industry. This development must inevitably force agriculture to a position of secondary importance, and is due to the fact that, whereas population is increasing, there is insufficient expanse of territory to maintain agriculture as the principal industry of the State. Japan's policy of expansion is, therefore, logical. The apparent lack of importance attached by China to her mineral resources is explained by the fact that she is still, and is likely to remain for some time, a country where agriculture is the predominant national industry. The Han-Yeh-Ping Iron & Coal Co. is, he said, the chief operator in China. Its mines are at Tayeh.

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Allied Intervention in Russia

The conditions upon which America has agreed to participate in a Siberian campaign with Japan, Great Britain and France, are a matter of much speculation and upon them will depend very largely the Far Eastern attitude towards intervention in Russian affairs. All opposition to intervention, or interference, as some are pleased to regard it, in Russian affairs has been conditional. It has been felt by many observers in the Orient that Japanese intervention would arouse strong opposition among a class of Russians who are anti-Bolshevik and to some extent pro-Ally, but who would resent Japanese intervention in Russia's internal affairs. It was also felt that it would drive not only the Bolsheviks, who are beginning to regret their bargain with the Germans, into a closer alliance with Berlin, which would militate against a possible internal adjustment of Russian affairs and the hoped-for revolt of all Russian parties against German tyranny. It was also feared that if Japan were persuaded to take independent action in Siberia, it would be for a stipulated reward in territory or privileges, either in China or in Siberia itself. Again, it has been argued that since the Bolsheviks constituted a comparatively small element in Russia, and since the majority of the people, under thoroughly efficient and patriotic leaders, have been preparing and organizing to restore order, shape a government, and reassume Russia's obligations, it would be best to wait until these sane and moderate elements in Russia asked for Allied assistance, because they could certainly be credited with knowing the temper of their own people and could best judge when intervention would do more good than harm. Another argument against intervention has been that to effect anything in Russia, or even in Siberia, a very big force would be needed in any event and a particularly strong

force in the event of organized Russian opposition to intervention; that communications are poor so that advances would be slow and the campaign a long one, however, ill-equipped the opposition, so that no real diversion would be created for months and perhaps years on the German eastern front, while men and materials badly needed in Europe would be diverted from the main theatre, to the profit of Germany.

America's opposition has been on the ground that the Russian revolutionary movement, however misguided and however costly to the Allies it has been, is essentially a democratic movement, that the Russian people are for the most part fully conscious of their obligations, are committed to the democratic cause for which America is fighting, and that they will eventually adjust matters in their own way. Hence it has been maintained that unless a clearly defined appeal from the Russian people reaches the Allies, the latter have no right to interfere and impose a system of military government of their own upon the Russian people.

It is apparent from the recent telegrams that France and possibly Great Britain, convinced that intervention would restore Russia to the ranks of the Allies and would enable the Allies to reopen hostilities with Russia and Turkey, have been very eager to have Japan agree to intervene in Siberia in conjunction with the Czecho-Slovak movement; while America has only agreed to join in the Franco-British pressure upon Japan conditionally. Whatever these conditions have been, Japan has evidently decided to comply with them and in this way to satisfy both France and America. It is to be surmised that America has insisted upon a joint expedition, jointly controlled, and that, in keeping with her own war policy, she has insisted that there are to be no territorial acquisitions or other material rewards. Japanese statesmen have been announcing only recently that Japan would much prefer to enter Siberia alone, and while the Sino-Japanese military pact would seem to contradict this, the Japanese press has confirmed it and has voiced a seemingly popular conviction that if Japan goes to the expense of putting a modern army into the field, which will certainly eat up all her war profits of the last four years, she should be permitted to do it in her own way and to make enough out of it to recompense her for the expense and loss entailed. It can, therefore, be imagined that a proposition to co-operate with the Allies on America's terms would be accepted with reluctance in Tokyo and that nothing but the combined request of all the Allies would carry weight with Japanese statesmen.

The Japanese Privy Council confirmed the Cabinet's decision to intervene, July 19, after some correspondence with Washington, which is said to have resulted in Japan's acquiescence in America's proposals. The Far Eastern representatives of the various Allied governments have already received instructions to prepare expeditionary forces and it is understood that America, Great Britain, France and Italy will use a great part of their available troops in the Far East in an expedition which will commence operations at Vladivostok.

What China's place in this movement will be it is difficult to judge. With her internal war still unsettled, and with the central treasury impoverished and the provinces rebellious, it will be impossible for her to contribute effectively on short notice. A failure to participate will be a breach of the recent Sino-Japanese military agreement, which, under certain circumstances, might be of advantage to Japan, since it would give her an opportunity to break her alliance with the Peking militarists before the collapse of their organization, and to ally herself with some other promising group in the South. The Allies might, however, assume that since the operations in Siberia will be jointly

undertaken, China is responsible to them as a group and not to Japan as an individual power, and on this ground they might readily insist upon sharing with Japan in the special privileges acquired by the so-called "arms alliance," and in whatever diplomatic steps are taken to include China in the intervention movement, in the event of either a breach on her part of the terms of the agreement or of compliance with these terms. Such Allied participation in Japan's relations with China would not be wholly unwelcome to those who are convinced that the "arms alliance" was much more to Japan's advantage than to China's, and that it was framed with the specific purpose of making China's participation ineffectual.

The Chinese Bolshevik.

The record of Chinese events important enough to be cabled abroad, during the past few months, has been very largely one of administrative scandals, associated with borrowings of Japanese money on terms which are to the credit neither of the borrower nor the lender. In the local Press these reports have been leavened by nothing more encouraging than accounts of new bandit movements in one province or another, or of new outrages committed by old bandit organizations or by the uncontrolled soldiery of one military leader or another. There is no apparent direct connection between banditry and loans, because the news of the loans and of other administrative evils in Peking permeates very slowly indeed to the bandit class; but there is an indirect connection, inasmuch as the banditry of the provinces is beyond question nothing more than irresponsibility in the sub-stratum responding to irresponsibility in the super-stratum. According to Chinese officials, who may be credited with a knowledge of their own people, the irresponsibility of the bandits, who are largely recruited from the agricultural districts, is not so much an emulation or a reflection of laxity in the high places, as it is a protest against the evils which are visited upon the people as a result of bad government. It is as difficult to hold a brief for the Chinese bandit, as for the Bolshevik, for the outrages which they commit are such savage offences against the peace and decency of innocent country communities that no excuse is sufficient warrant for them. But if, as the Chinese say, there is no bandit without a grievance and if economic conditions brought about by official oppression, official neglect of duty, mismanagement or misgovernment, are responsible in about 80 per cent. of the cases for bandits, then banditry must be regarded as a kind of inarticulate expression of public opinion. We are always lamenting that in China there is no such thing as public opinion to guide and check the official classes, within which offenders against the public weal are responsible now to no one but their political rivals for their sins. The English Press in China takes advantage of every opportunity to remind the Chinese people that they are permitting their rights and liberties to be peddled abroad, their industries to be overturned, their commerce to be cut off in a dozen provinces, and their fellow countrymen to be fleeced and slaughtered by rapacious officials and merciless soldiery, without uttering a protest or producing a single leader strong enough to call the Government to account. Upon the wrongs of the people there seems to be no popular comment. Perhaps we have not listened for comment in the right quarter or watched the right medium for its expression. We should naturally look to the Press and the enlightened officials for an expression of popular feeling, but we forget that in China the people are not accustomed to use these mediums. The

Press does not reach them, so they have very little influence upon the editorial policy of their native papers, and the officials they do not trust. Between even the best of the officials and the common people no bond of sympathy has as yet developed. It has not occurred to us to look upon social unrest, upon banditry and the outrages committed by bandits upon their fellow countrymen, as evidences of popular disapproval of the government, yet the Chinese will invariably assure us that these movements have a significance which they recognize but which is hidden from the average Occidental observer.

It would be quite impossible, of course, to prove that a particular bandit movement, in the province of Yunnan for instance, was a conscious protest against the consummation by the Peking Government of any particular deal involving a sacrifice of the property or rights of the people; but it is very apparent that a Government which will enter into a deal sacrificing public property for the personal profit of the officials concerned, will use officials and countenance official acts in the provinces which force the people into outlawry. The bandit, when he takes up arms and turns against society, may cherish as his grievance the confiscation of his little bit of arable land or an unjust decision against him in a law court, and he may not even realize that the toleration of the injustices visited upon him by the officials with whom he comes into contact is an insignificant weakness in the Peking Government compared with the cession on a great scale of his rights as a Chinese citizen, but he is nevertheless meeting the irresponsibility and selfishness of the official classes, which are the cause of both great and small evils, with violence, selfishness and irresponsibility on his own part. In this sense, therefore, the growth of lawlessness in China, founded, the Chinese tell us, upon local economic and government conditions, is a public protest against the sins of an evil Government and is, therefore—as Bolshevism was at first—a blind and inarticulate expression of public opinion.

There is very little that is picturesque about the average Chinese bandit. He does not rob from the rich and give to the poor as a rule, nor does he treat women with fine chivalry. He robs the poor and the rich, murders indiscriminately and abuses women. But then the Robin Hood type only develops among professional bandits and the Chinese robber is more often an embittered farmer or an outraged petty merchant than an adventurer. He turns wolf because it is impossible for him to be a man and live, and in his capacity as wolf he is consistently merciless. When conditions make it possible for him to earn an honest living again he abandons outlawry, takes to ploughing and to all appearances has no more inclination to violence than any of his honest, good-natured, hard-working neighbours.

Chinese officialdom understands the Chinese bandits and recognizes in outlawry a symptom of unrest and protest, so the Chinese official deals with the outlaw element differently from the officials of any other country. He makes treaties with them, exacts pledges from them not to molest certain roads or communities on certain conditions, he reestablishes them in ordinary conventional civilian life sometimes, and sometimes takes them into the army. All of which amazes the foreign spectator, because he does not understand that Chinese bandits are not often adventurers, but protestants against conditions which make it impossible for them to live, who have the courage to take up arms and make war on the social order instead of starving meekly in the ditches. The outrages which bandits commit one cannot condone, but since they are attracting so much attention throughout China and making trade in the interior of the country more and more precarious and expensive, it is just as well to understand that they are rather a symptom of evil than a cause and that

it is sound administrative practice, just as it is sound medical practice, to doctor the cause and not the symptoms.

A good deal of pressure has been brought to bear upon the Chinese Government during recent months by the representatives of various powers on account of bandit outrages upon foreigners. Peking is, of course, responsible for keeping order, and since the diplomatic agents of foreign Governments cannot go directly to the people and discuss their troubles with them and make independent arrangements with them for the safeguarding of foreign life and property as long as they recognize a central administrative organization in the capital, there is apparently no alternative for them but to ask for bandit suppression. This in spite of the fact that, by the confession of Chinese officials, the bandit movement is very much like a democratic protest against economic conditions brought about by administrative evils, laxities and malpractices which it is not the custom of any of the governments concerned to countenance. The formal conventions of diplomacy make it impossible for diplomats to deal with a recalcitrant and rebellious proletariat until that proletariat has organized itself, gathered its strength, overthrown the power previously recognized by diplomacy as the Government, shaped an administrative policy and pushed certain figures to the foreground as its leaders and representatives. While the proletariat is growing to this stature and feeling its way towards organization in a blind, blundering, crude way it usually accumulates as big a burden of sins and follies as the sansculottes or the Bolsheviks, and emerges from chaos as a brutal and sinister force which no self-respecting nation feels inclined to recognize as a democracy. At such a time we debate violently among ourselves as to whether we should restore autocracy, just for the sake of restoring decent appearances, or whether we should take our new unwashed and unkempt brother democracy into a fraternal alliance and help to groom him.

If the diplomatic conventions only permitted us to start the grooming at an earlier stage in a given proletariat's development we should probably be able to forestall such movements as Bolshevism and to help develop a democracy without a reign of terror. When the Chinese revolution blew up and blew over in 1911 it was fondly believed abroad that, without any particular guidance or assistance, China had thrown off autocracy and adopted democracy, dispensing altogether with the period of terror. We have come to realize since, however, that the revolution was a movement among one limited class of Chinese only, that it scarcely touched the people's interests, that they were scarcely aware of it and that their awakening has yet to come. Now the Chinese are not a violent people and if conditions of growth were made easy for them, they would probably emerge into intelligent democracy with as little anarchy and bloodletting as any people on earth; but conditions are not easy. The administrative evils under which they suffer are encouraged and supported by outside interference, by foreign loans and the stimulating of internal troubles. All they have to thank the outsider for, so far, is for helping to aggravate conditions to the point where bitter experience has a highly educational value and a value as a stimulant in the awakening of a somnolent race. The thousands of Chinese bandits now at large in every Chinese province, who are growing bolder and more destructive from day to day are potential Chinese Bolsheviks who have not yet evolved an organization or a mission. An educational campaign, instead of a campaign of repression, one can suggest to those Chinese officials who are not too seriously involved in political conspiracy to be wholly indifferent to the future of their country; but it would be much too radical a contravention of diplomatic practice to suggest to the diplomatic representatives of foreign powers. Diplomatic precedent dictates that no definite action can be taken

in the interests of the Chinese people in their troubles until they explode as a mass and enjoy the inevitable revel in terrorism.

Imminent Collapse of the Military Party

It is very generally felt now that the present Peking Government, which has been gambling recklessly for complete military control of China, has wholly failed in its attempt to consolidate its power by force, has ruined the country's credit through its borrowings from Japan, and has lost the confidence of its military retainers. Another collapse seems imminent. The Japanese show some slight reluctance about lending any more money, even on the very favourable terms obtained and in exchange for very valuable concessions, and it is believed that they are only waiting for an opportunity to withdraw their support from Peking and to make a fresh alliance with whichever southern faction shows most promise. The northern soldiery will not fight in the south because they have no confidence in their cause or their leaders; and the leaders, who are as fickle in their allegiance to Peking as the soldiers are in their loyalty, plague the Government with alternate demands for money and peace. In Peking the President's following and the Premier's following are literally at sword points. The principals in the Japanese loan negotiations, Tsao Ju-lin and Lu Tseng-yu, live and move under strong military guard for fear of assassination, and the Premier's agent, Hsu Shu-cheng, the desperate little man who killed Liu Ch'ien-chang a few weeks ago and who has found reinforcements for the northerners in all their southern campaigns by bullying various military governors into parting with their troops, is traveling frantically back and forth between Peking, Tientsin and Mukden trying to keep his organization alive and to borrow still more men and money.

Possibly the most important news of the past two months has been the substantiated report that General Wu Pei-fu, the senior commander of the Chihli troops in Hunan, has come out strongly in favour of peace. He has, on his own initiative, come to terms with General Chao Heng-ti, the southern commander, and they have mutually agreed to an armistice. Peking has suppressed this news as far as it has been possible. The greatest blow yet aimed at the war-party of the north is the peace proposal of General Wu. He has the hearty co-operation of General Feng Yueh-hsiang, who is also at present with his troops in Hunan. These two northern generals have won the gratitude and admiration of the Hunanese for the good behaviour of their men when passing through on their way to the front. It is fortunate that this province, which has been made to suffer so much at the hands of Generals Fu Liang-tso and Chang Ching-yao, has now within its borders two northern military men of real moral worth.

Premier Tuan and his chief lieutenant, General Hsu Shu-cheng, are at last realizing that it is impossible to continue their campaign against the South. Tuchun Tsao-kun, the Commander-in-Chief of the expeditions despatched to fight Kuangtung, Kuangsi and Yunnan, remains in Tientsin. His two chief subordinates, Generals Chang Huai-chih and Lung Chi-kuang, are still unable to proceed to the battle front. General Chang Huai-chih is in Hankow in the foreign concessions, wiring daily for funds from Peking, while General Lung refuses to leave the North until he secures \$5,000,000 to organize forces for the relief of Kuangtung. Some time ago the Premier boasted that he would be in occupation of Kuangtung within three weeks

The three weeks have passed and his various commanders have as yet not started for the front. The truth of the matter is that neither Generals Chang nor Lung have any troops of consequence left them. General Chang was severely defeated when he met the southern troops on the Kiangsi-Kuangtung border and his men have been scattered to the four winds. Lung Chi-kuang was driven out of Kuangtung and his troops left by him on the Island of Hsinan have mutinied. Now we find the commander of Tsao Kun's army in Hunan declaring himself in favour of peace and actually coming to terms with the South.

The Tuchun of Fukien is being hard pressed by the South, and many of his junior commanders have gone over to the ranks of the constitutionalists. In fact, all of the native Fukien troops have revolted against the Tuchun and are now under the command of the former Tuchun, Sung Tao-jen. Tuchun Li Hou-chi is pleading daily with Peking for reinforcements and for money with which to bribe his soldiers, but the authorities are so much in need of money to maintain their position elsewhere that the Fukien Tuchun need expect little help. General Tung Pao-hsuan, the Chekiang commander, is said to be contemplating turning his division over to the South. It is well known that he asked to be sent to Fukien to get from under the command of Tuchun Yang Shan-teh.

General Wu Kuang-hsin, who was despatched some ten months ago to subjugate Szechuan, is still at Ichang unable to advance against the Yunnanese. With the coming independence of Hupeh and Hunan he will find his position untenable. The report is that he has already made his way secretly to Peking.

Tuchun Ni Shih-chung of Anhui has no troops that can fight, and he is now a negligible quantity. Generals Chang Wen-shen and Pai Pao-shan—the former at Hsuehowfu and the latter at Haichow—are anxiously awaiting orders to capture Pengpu, the headquarters of General Ni. They are the followers of Chang Hsun, who was so badly betrayed by Tuchun Ni, and nothing would please them more than to secure revenge.

At one time a great deal was heard of the Fengtien soldiers. These men have been defeated both in Fukien and Hunan and have no heart for further fighting. They are daily clamoring to go home on the ground that the climate is unsuited to men who hail from Manchuria. It is true that hundreds of them have died from sickness in both of these provinces. Tuchun Chang Tso-lin refuses to send more of his men to be beaten by disease and southern soldiery. It is a difficult matter for General Hsu Shu-cheng to keep the Fengtien men he has with him at Tientsin. The old Mukden warrior has realized the utter futility of the war against the South and is seeking an opportunity to escape from the whole miserable affair. Meanwhile, he is being closely watched by his old enemy Tuchun Meng En-yuan of Kirin, who is anxious to supplant him.

Work for Chinese Women

In the Chinese social order no provision is made for self-supporting women. In all circumstances a Chinese woman is supposed to be dependent and in theory she should always be attached to some male relative whose duty it is to support her. All women, whether mentally and physically sound or unsound, are supposed to be married when they arrive at physical maturity. No provision is made for old maids. All orphans, in the clan system, are supposed to be surrounded by a large group of relatives who

can and will support them during childhood and will find them husbands when they are old enough. All widows are supposed to have sons who will support them in their declining years. Under the old clan system, with every woman married no matter what her mental or physical disabilities, and with every individual surrounded by a host of near relatives, there should never have been any occasion for a woman to support herself, and in primitive Chinese rural communities the mutual obligations of the units in the clan are still recognized and no great need for vocational training among women or for opportunities of self-support are apparent to the people. In the coastal provinces and in the large commercial communities, however, the integrity of the clan is rapidly breaking down and the responsibilities of the individuals are not so clearly recognized. Orphans who appear to be unprovided with uncles, girls for whom no husbands can be found, widows without sons or other relatives to support them and discarded wives and concubines, who are thrown entirely on their own resources, are occasional in the country districts but are increasingly numerous in the cities and in those parts of the country in which improved communications are making such radical changes in old institutions. For this increasingly large class of women, ninety-nine per cent. of whom are wholly illiterate and who know only domestic work, there is no field whatever. The demand for domestic servants does not nearly exhaust them, even in rural communities, and the average young Chinese woman who finds herself alone in the world has usually to choose between beggary, prostitution or suicide. Of these alternatives beggary is the least attractive, and since China in recent years has developed an elaborate system for pandering to vice which reaches into the most remote country districts, a large percentage of those who are endowed with youth or good looks find their way into public or private prostitution. The Chinese women not only cannot support herself, because she has neither the opportunity nor the training, but she never conceives of supporting herself, because Chinese tradition teaches her that she is a dependent, and is wholly unaccustomed to assume the responsibility of directing her own affairs. Whoever will assume this responsibility, even if he or she leads the woman into prostitution or slavery, enjoys her full confidence and loyalty; and against the will of whatever person assumes control over her she has no thought of rebelling. Because there is so little that the woman can do, so little that she is fitted to do, because she makes so little resistance against whatever evil fate is assigned her, and because the social system which once afforded women something like adequate protection is breaking down, the growth of systematized prostitution in every big commercial centre in China has been enormous in recent years and is most difficult to check. No amount of moral instruction or legislation can check such a tendency in a people when it is guided almost wholly by economic conditions. In a purely Chinese community of the old order all classes are, contrary to foreign opinion, peculiarly prudish and puritanical. Moral laxity is regarded with horror and the very terminology of prostitution is unknown. It can be imagined, therefore, what an effect the introduction of highly organized vice has upon the general moral integrity of such communities. As an antidote for the strong tendency towards general moral disintegration, which is only too apparent in the big Chinese trading centres, there is nothing to suggest but education and work for women. China must develop industries in all communities which will provide the women of the poor and illiterate classes with the means of earning an honest living and which will afford the growing numbers of educated Chinese women from the schools the opportunities which they need to do clerical or professional work.

The only profession that is now open to the girl graduates of Chinese schools is that of teaching. There are many other things which they might do and are fitted to do, but Chinese conservatism stands in the way and frowns upon innovations. Girls' schools are none too numerous, but even now the girl graduates of Chinese schools outnumber the opportunities afforded them for making use of their educations. In the large cities where schooling is inexpensive, girls from poor and humble families come out of school and find that there is no prospect before them except that of marrying into some other poor and humble family, which may entail an alliance with an illiterate workman. One can only teach, marry badly or go astray in the independent search for a more colourful existence than that promised by a marriage with an unwashed coolie. There is no difficulty about finding suitable husbands for the daughters of men of wealth and standing, but as education becomes more general the need of providing openings for the educated girls from families which are not in a position to marry them into any households but those of their own class becomes more acute. The school girl who goes astray seemingly of her own free will because there is nothing better for her to do, is a conspicuous argument against female education, at which the conservatives readily clutch and which they exploit to the fullest. Yet the fault is not half so much with the girl as with the unelastic social order in which she finds herself.

The opening up of various lines of clerical and professional work to women in China should at least keep pace with the expansion in female education, so as to provide a place for the girl graduates whose families are too poor to support them and who for one reason or another do not find it convenient or desirable to marry as soon as they leave school. Chinese women do not have sufficient initiative to make places for themselves, so it is the duty of those who are encouraging education and promoting girls' schools to create openings and to work in the Chinese business communities against prejudice. In the country districts the establishment of industries in which women could be employed would be a tremendous boon and in seasons of distress, which recur so frequently in every one of the eighteen provinces, the employment of women in manufactures would make it possible for impoverished communities to tide over bad harvests and would largely check the sale of children and young women which follows upon every famine, flood, or other public calamity.

In the last few years there has been a marked increase in the number of women employed in Japan in shops, offices, telephone exchanges, and railway offices. What is possible in Japan is also possible in China for a few decades ago social standards in these two countries were founded upon the same classical traditions, and the prejudice in Japan against the participation by women in business or public affairs was as strong as it is still in China. Women have long been employed in factories in Shanghai and other large cities where the example was set by foreign employers, and in a few communities Chinese shop girls are beginning to appear, but in the interior only such work as can be done in the home, such as the spinning of cotton thread and the weaving of straw braid, has been made available. The fear of ridicule probably deters many from employing women in work which they could do and would deter the women from taking employment. The Chinese of all classes have a keen sense of humour and find much amusement in any novelty, while at the same time they are extremely sensitive to ridicule. Although the crowds of singing girls in Chinese tea houses attract no particular attention, a Chinese waitress in one of these institutions would draw as large and as highly amused a crowd as a performing bear, and no salary would tempt a Chinese girl to face the ridicule of a critical

Chinese crowd. Nevertheless the crowd and the girl have to be reconciled to each other in some way if China is to provide any opening for her school girls.

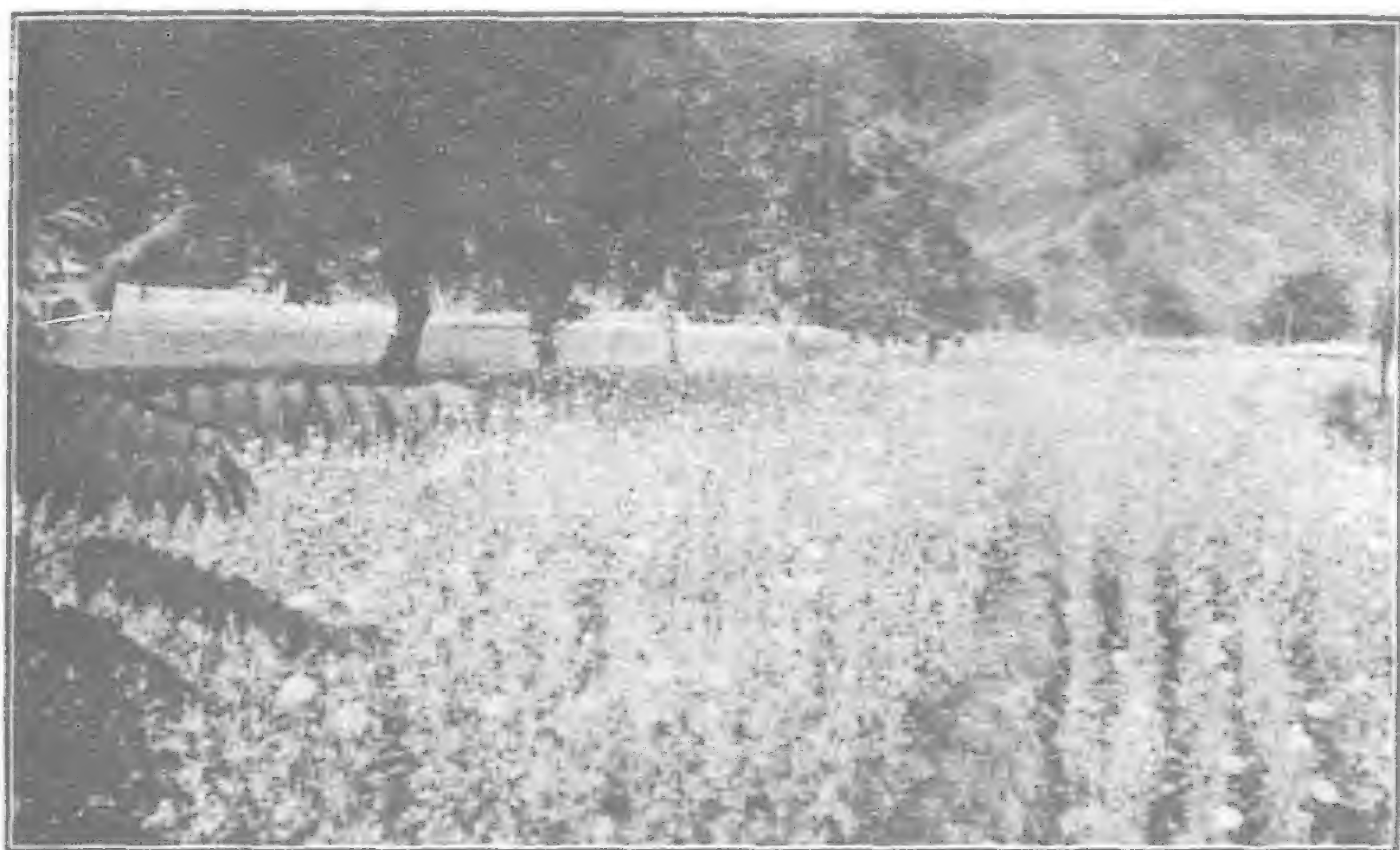
Under the old order of things in China it was taken for granted that every woman, no matter how unfit or how disinclined, had to marry and had to give birth to as many children as possible. The Chinese are now beginning to realize that over-population is at the bottom of many of their troubles and that thousands of children are brought into the world every year for whom there is no possible future except one of misery and want. This is a problem which becomes more and more acute every year, but as long as there is no way of supporting a woman except by marrying her off, and as long as the common people retain the conviction that children are an unmixed blessing, the greater the number the greater the blessing, there can be no hope of controlling the huge growth of the population. The introduction of modern medicine into many Chinese communities is making the Chinese familiar with infant conservation moreover, and as the death rate among infants is reduced the annual increase in population will naturally go up. If it were possible throughout China for women to support themselves, if they chose, the forced breeding to which the entire female element in the population is devoted because there is no escape from it would be checked in each community and the standard of living would rise with the decrease in the birth rate and the rise in the economic output. The practice of vice as a profession would devolve then upon the few volunteers and not upon the great number of unfortunates with whom it is the only alternative to starvation.

The Opium Revival

There is no possible doubt now that the revival of opium culture and of the sale of opium in China is a deliberate and carefully premeditated scheme of the central Chinese Government, or that the officials of many provinces have been taken into the Government's confidence and have been encouraging the replanting of opium in connivance with Peking. For the past six months and more reports have been coming in from the various provinces, mostly from the remote districts, of the growth and sale of opium under conditions which pointed to official sanction, but everyone has been inclined to make allowances, to take into account the difficulty of perfect control under the disturbed conditions which prevail in so many districts, and to excuse the officials who have not sufficient military support to cope with the lawless elements which go in for illicit opium dealing. Both the Chinese and the foreign public in China were inclined to take the first reports of the Government's purchase of the Opium Combine's residue stock with a grain of salt, and the Government's argument, that it was buying up the 1,600 chests to make medicine of them and thereby get rid of them, was advanced and supported by many persons who wished to take as charitable a view as possible. The account given of this deal in the July issue of the FAR EASTERN REVIEW, taken largely from reports in the daily press, is unfortunately confirmed, however, and there is no longer any reason to doubt that the Government has bought the Combine's opium with the deliberate purpose of setting up a semi-official clique in the opium business or that it has been quietly relaxing its control of opium culture in the provinces so that when the stock of imported opium is exhausted the dealers, who will pay heavily for their official license, will have fresh stock to draw upon and also so that the Government and its dependents will have something to tax. The opium purchase deal has served to concentrate attention upon local opium culture

and has brought to light the fact that opium is not only being grown in the remote valleys of Szechuan, Yunnan, Kuanghsi, in the hill country of northern Shensi and Shansi, and in similar out-of-the-way places, but that poppies are even now in bloom in Chihli province within 80 miles of the walls of Peking and that the culture there is netting a resident magistrate a handsome income. The accompanying photograph shows a cultivated field of opium poppies near Sanpo, west of Peking, where the magistrate is now imposing a tax of about \$180 an acre upon opium land.

Apart from the injury which the present Government in Peking is doing the Chinese people in reinflicting opium upon them, after ten years of sincere effort on the people's part to eradicate the curse, it is doing more in this apparently insignificant deal to bring itself and the Chinese nation into disrepute abroad than in any of its other doubtful transactions. A good deal of sentiment and sympathy have been lavished upon the Chinese opium victim in Great Britain and America, and not a few prominent persons in both countries have given much of their time for a decade or more pleading the Chinese cause and bringing about the end of the Indian opium traffic. The interest in the Chinese opium question can be measured by the interest aroused in the British House of Commons at this time and by the resolution adopted to prevent the revival of the Indian trade with China, no matter what transpired in this unhappy country.



A FIELD OF POPPIES 80 MILES FROM PERING.

According to the latest news of the recent deal, the Anfu Club, the political organization of the Northern Militarists, has taken the opium over from the Government at Tls. 8,000 a chest and is pledged to sell it to an opium syndicate, with headquarters in Nanking, at \$20,000 a chest. It is proposed to market 45 chests a month.

Revision of China's Tariff

The basis of the revision of the Chinese Customs tariffs was agreed upon by the international committee, which has been sitting in Shanghai for some months, and by the Chinese Government on June 26. The basis agreed upon, after much bargaining, many deadlocks in Shanghai, and a great deal of diplomatic discussion in Peking, is the average of the values of imports as they appear upon invoices during the years 1912 to 1916. Upon this valuation of goods a tariff of 5 per cent. will be charged. The Chinese tariff is nominally *ad valorem*, but as all parties concerned refuse to rely upon invoice valuations and as the traders of certain nations object strenuously to paying a full five per cent. on existing values, China has always had to agree to a fixed compromise valuation, subject to revision by the unanimous consent of all concerned, whenever existing values seem to differ radical-

ly from the fixed valuations. This is the first revision that has been made since 1901, the Japanese having stood in the way of a change each time the matter was brought up, and on grounds which have been given in some detail in previous issues of the FAR EASTERN REVIEW, the Chinese have no particular reason to be elated over the present settlement; although the fact that Japan could be brought to agree to any terms involving an increase of duties on imports may be considered subject for congratulations.

The city of Wusih, on the Shanghai-Nanking Railway, is one of the most promising of China's industrial centres. Ten years ago it had but one cotton mill. To-day, according to Professor Soon Tsung-faung, it possesses more than fifty large factories. There are three cotton mills, employing 5,000 work people, and making an annual net profit of some \$100,000 to \$350,000; 12 silk filatures, with 5,000 employees, and profits of \$100,000; 3 flour mills, employing 2,000, with profits from \$5,000 to \$15,000; 3 oil factories, with 500 employees and profits of \$5,000 to \$15,000; 24 threshing mills, and an electric light plant, with profits of \$55,000. There are 35 establishments for the storage of rice, and five for silk cocoons; 19 banks, four employing European methods, with business ranging between \$3,000,000 to \$5,000,000 annually. The population of Wusih before 1915 was estimated at 300,000, while it is now stated to be 808,279. There are 269 schools for boys and 23 for girls, with a total of 16,800 pupils.

Wolfram in South China.

(BY OUR SOUTH CHINA CORRESPONDENT).

Considerable exports of rare metals are taking place via Hongkong. Of the five Southern provinces, Yunnan, Kweichow, Fukien, Kuangsi and Kuangtung, the first and the last seem to offer the most sanguine possibilities for mineral output in the near future. Most of the wolfram and tungsten comes from the province of Kuangtung. The Japanese are proving themselves competitors in the market for the purchase of these raw materials. One large firm has its agents in many places in South China and does all of its work very quietly. It ships large quantities to Japan and to America.

It is pathetic to think that, although the present developments are important, they only reveal what would be possible if the Southern provinces were peaceful, and if the officials encouraged mining enterprises. It is, of course, inevitable that some day all of this mineral wealth will be utilised. At present the ore is being shipped out of Hongkong, although there are indications that there will be refining plants erected in Kowloon.

There are some young Chinese graduates of American Universities who have set themselves up as expert mineralogists, but it is difficult to ascertain whether their own countrymen have sufficient faith in their technical ability and their integrity to supply the capital necessary to develop wolfram smelting works. The cost of such an establishment is considerable and experienced supervision is essential for success. In this, as in so many other industrial enterprises, the best policy would seem to be co-operation between British or American and Chinese capitalists. Otherwise the Japanese will secure everything. That they are working hard to secure a firm footing in the mineral world of South China is a fact as patent to foreigners as to the Chinese.

At the request of local merchants the Hongkong Government undertakes analyses, and furnishes certificates concerning samples of minerals. That is valuable and the stamp of the Hongkong Government is now a recognised guarantee all over the world. Incidentally the laboratory is a source of revenue to the Colony, many thousands of certificates being issued each year.

One of the most remarkable men in the Far East has always had a firm faith, not only in the mineral development of South China, but of the territory in it leased to Great Britain. He is a wonderful old gentleman, and the writer has, on more than one occasion, written of him as the Father of the Colony. He might well be called the Napoleon of Commerce of the Colony of Hongkong. Rumour says that he has made three fortunes and lost two. He has certainly the courage of his convictions, and he has spent a great deal of money in mining prospects in South China. His name, famous in the history of Hongkong, is Sir Paul Chater.

To-day Sir Paul sees some of his dreams coming true, he is a happy man. He has found wolfram and other rare metals in the New Territories which stretch behind Kowloon. He has had coolies at work out there for years, and he has obtained all sorts of mining rights. No doubt, in the early days of his efforts to discover minerals near Hongkong, people thought that he was following a wild-goose chase. He had all of the troubles common to all pioneers. But he had a faith, probably built upon the results of analyses of odd samples supplied to him by Chinese. And now, to-day, he is in communication with the British Government and has offered to supply definite quantities of the rare metals, so essential for munition work. He is very sanguine about the supply of wolfram.

Foochow Plans Port Improvement

No little interest attaches to a meeting held in the latter part of June at Foochow, when a scheme was laid before the foreign business community of Foochow for the improvement of the Min River from Nantai to Pagoda; if the wishes of its sponsors are carried into effect, the result will greatly magnify the importance of Foochow as a port.

Foochow, with over 600,000 inhabitants, capital of Fukien, 46,332 square miles, over half of which is in the valley of the Min River, is clearly the natural port for its large hinterland, and while the Pagoda Anchorage undoubtedly has given the place a certain rank as a seaport by serving as a harbour for vessels drawing up to 27-ft., the water connection with Foochow itself is such that only native small craft, junks, launches, and coastal craft of from six to eight feet draught can actually reach the port. Pagoda Anchorage in itself is by no means ideal: low water at the bar only yields 11-ft. and it is only at high water that vessels at 24-25-ft. can enter, although, once in, there is anchorage room for considerable traffic. Thus, as far as depth is concerned, the port of Pagoda Anchorage has the necessary qualification for an ocean port of the second order.

The aim of the improvement is to create a navigable depth of 10-ft. at ordinary low water over a width of at least 300-ft. by laying down normal lines which will demarcate the regulated channel and the means chosen are training works only. In other words the river is to be put to work to improve itself. Dredging will be reduced to a minimum, although it would be undoubtedly valuable in assisting in the task which the training works are to perform. Dredgers, it might be stated, are in these times out of the question by reason of cost. The trade and shipping of the port will have to pay for the improvement, though a contribution from the Provincial authority may be necessary not only for the purpose of carrying out the work but also to maintain the governmental character of the undertaking.

When the results of carrying out the project which has been prepared are considered, an overwhelmingly good case seems to have been made out for the improvement. It would mean the unhindered navigation at any time of the day or night for coast steamers, tugs, launches and junks of

up to 9-ft. draught and it would enable steamers of 16-ft. to enter or leave twice a day with the help of the tide.

The entire cost of the river improvement is estimated at \$900,000 as the exact figure can only really be decided as the work progresses and experience decides what further or less work has to be done. To meet this sum, which is to be spread over three years, an annual income of \$90,000 in taxes and government grants is suggested. With such an income the debt could be totally extinguished in 14 years.

Following the precedents established at four ports in China where Conservancy works are in operation, first thoughts are directed to a surtax on customs duties.—*Summarized from "North-China Daily News," July 15 and 16*

Shipbuilding in Japan.

It is maintained that the most developed industry during the war in Japan is that of shipbuilding and that it will be an easy matter to produce 600,000 tons of new shipping in a year. According to the estimates made by leading shipyards, the vessels which will be completed during the latter half of this year will total 83 vessels and 246,000 tons only; that is about 500,000 tons a year. This is the state of affairs even when the question of supply of materials has been solved by the conclusion of the negotiations for exchange of ships for steel with America. It should be noted that the entire amount of ships built in a half-year in Japan is less than that of America for one month. The following is the list of the shipyards and their estimates:—

	Number	Tonnage
Osaka Iron Works...	18	100,600
Nagasaki Mitsubishi Dockyard...	8	29,320
Kobe " "	3	5,000
Uno Dockyard " "	2	7,000
Ishikawajima Iron Works " "	3	9,600
Asano Dockyard " "	5	14,900
Chitose " "	3	3,600
Tokyo " "	3	3,000
Kibi " "	3	3,990
Fujinagata " "	4	8,200
Harima " "	4	18,190
Hara " "	1	1,200
Harada " "	2	3,800
Bingo " "	4	6,000
Yoshiura " "	6	8,500
Nitta " "	1	1,000
Asahi " "	4	13,100
Aizawa " "	4	4,800
Hakodate " "	3	3,600
Ono " "	1	1,200

Note.—No report had arrived from the Kawasaki Dockyard before this list was made.

SHIPS BUILT IN OSAKA IN 1917.

Along the Kitsugawa.

MATERIAL.	NUMBER.	GROSS TONNAGE.	VALUE IN YEN.
Wood	16	10,085	2,924,650
Steel	6	6,548	3,601,400
Wood	16	11,687	3,389,230
Steel	17	30,800	16,940,000
Total...	55	59,120	26,855,280

Along the Shirinashigawa.

MATERIAL.	NUMBER.	GROSS TONNAGE.	VALUE IN YEN.
Wood	19	9,866	2,861,140
Steel	26	29,700	16,335,000
Wood	7	5,166	1,551,220
Steel	7	9,140	5,017,000
Total...	59	53,872	25,774,360

Along the Ajikawa.

MATERIAL.	NUMBER.	GROSS TONNAGE.	VALUE IN YEN.
Steel	7	7,400	4,070,000
Steel	4	24,200	13,310,000
Total...	11	31,600	17,380,000

The Rise in Railway Rates in Japan.

Season and Commutation Tickets.—The Imperial Japanese Government Railways will revise the Regulations concerning season and commutation tickets as from August 1. With regard to season tickets, the advance will be kept as small as possible—the maximum being about 20 per cent. The price for third class tickets available over more than 17 miles will be even less than previously. The second class fares will be 160 per cent. of the third class fares, and the first class fares 260 per cent. of the third class fares, instead of 175 per cent. and 275 per cent. respectively, as in the new tariff for ordinary passenger fares. The advance in the prices of the tickets available for one year is comparatively greater in percentage in the revised tariff, but this is due to the fact that the present prices of the said tickets are abnormally small and do not maintain a fair balance with those of the other tickets.

The price of students' season tickets will be 75 per cent. of those of the ordinary season tickets, and tickets available for one year will be instituted in addition to the present one month, three months', and six months' tickets. Compared with the present prices, the revised ones will be only 10 per cent. higher on the sections which have the greatest increase. Those who utilize the newly established one year tickets, to which a considerable percentage of reduction will be applied, will travel far cheaper than before.

Although the present circumstances necessitate a general increase in the prices of various tickets, it was thought highly advisable that the advance in the prices of such special tickets should be kept as small as possible.

Those who have made continuous use of season tickets will be privileged as before to 10 per cent. additional reduction, and the Railways have made further arrangements which will benefit passengers a little in the matter of refund on any unused portion of the available period of the tickets, and in the matter of the extension or partial alteration of the section for which the ticket has been issued. On the other hand, regulations have been instituted to prevent the abuse of the tickets, and forfeiture will be strictly enforced in the case of those who make wrongful use of such tickets.

Season tickets issued prior to August 1 and actually in use will be available also after the said date without extra payment. However, the new rates will be applicable to such tickets as are issued in July but the use of which is to begin after the said date.

The new prices of the commutation tickets will be, as before, 20 per cent. to 30 per cent. of the ordinary fares, those of the second class tickets being 175 per cent., and those of the first class 275 per cent., of the prices of the third class commutation tickets. The revision will result in an increase of 19 per cent. to 25 per cent. in the prices.

Commutation tickets issued prior to August the 1st will be available also after the date without extra payment.

NEW TARIFF FOR LUGGAGE AND PARCELS.

Following the increase in the passenger tariff and in the prices of season and family commutation tickets, new rates have been announced for the conveyance of luggage and parcels, and certain revisions on storage charges therefor, etc., which are roughly as follow:—

1. About 20 per cent. increase, of an average, over the present tariff, although the rate of increase varies according to the kinds of articles and distances to be covered.

(a) *Ordinary Parcel Rates.*—In order to simplify the complicated system of calculating the present rates which differ closely according to mileages and weights, for the convenience of shippers as well as railway clerks in charge, the Imperial Government Railways made it a chief point of the present revision to decrease the number of basic rates.

In the present tariff the one and same rate is followed for articles to be carried over 700 miles, but the recent extension of lines open to through traffic and the considerable increase in the number of parcels conveyed over long distances, have made it necessary to keep a fair balance with those carried over comparatively short distances, hence the establishment of entirely new parcel rates for distances from 800 miles to 1,200 miles. The minimum charge of 7 sen has been increased to 10 sen.

The new tariff for ordinary parcels is shown elsewhere.

(b) *Special Parcel Rates.*—The new tariff for chief special parcels is shown elsewhere.

(c) Rates for newspapers and magazines, or milk, fish, vegetables and eggs supplied to cities, are, in accordance

with the general principle of the revision of fares and rates adopted by the Imperial Government Railways, not touched and remain quite the same as at present.

2. *Charges for Delivery and Storage of Luggage and Parcels.*—Delivery charges have seen no change in the present revision, but storage charges have been revised so as to be 5 sen for each package of luggage and ordinary parcels instead of so much for certain scales fixed according to the weight of packages. The revision will no doubt simplify the transactions in connection with the deposit of packages.

3. Owing to the recent congestion of goods traffic which is due to the prosperity of market in general, a great deal of goods have been turned over to parcel consignment, which gave rise to no little trouble in handling parcels and to frequent delays of passenger trains. In addition, therefore, to the present limitation in length, width and weight, the dimension of packages is also limited to 40 c.f.

Bicycles for passengers' own use are now carried for the charge of only 15 sen each, but as the number of such bicycles has greatly increased, great trouble in their handling at stations, and unnecessary delays of passenger trains have often resulted. In consideration of this state of affairs, the Imperial Government Railways found it necessary to place some limitation in the distance of conveyance which, following the original principle of the inauguration of this system, has been made to be 50 miles one way, the new charge being 25 sen per bicycle.

COMPARATIVE TABLES OF OLD AND NEW RATES TO BE IN FORCE ON AND AFTER SEPTEMBER 1ST.

1. Rates for Ordinary Parcels: New Rates (Minimum Charge, 10 Sen).

For distance	2 kin or under	4 kin or under	7 kin or under	10 kin or under	15 kin or under	20 kin or under	For every 5 additional kin or frac- tion thereof
	Y.	Y.	Y.	Y.	Y.	Y.	Y.
50 m. or under	.10	.10	.10	.13	.18	.23	.05
150 m. or under	.10	.10	.16	.22	.31	.41	.10
300 m. or under	.10	.14	.22	.31	.45	.60	.15
500 m. or under	.10	.18	.30	.42	.61	.81	.20
800 m. or under	.13	.23	.38	.54	.79	1.04	.25
1200 m. or under	.16	.28	.46	.66	.97	1.27	.30
1201 m. or over	.19	.33	.54	.78	1.15	1.50	.35

Old Rates (Minimum charge, 7 sen).

For distance	1 kin	2 kin	3 kin	4 kin	5 kin	6 kin	7 kin	8 kin	9 kin
	Y.	Y.	Y.	Y.	Y.	Y.	Y.	Y.	Y.
Under 50 m.	.07	.07	.07	.07	.08	.09	.10	.11	.12
" 100 m.	.07	.07	.07	.09	.10	.12	.13	.15	.16
" 150 m.	.07	.07	.08	.10	.12	.14	.16	.18	.20
" 200 m.	.07	.07	.09	.12	.14	.16	.18	.21	.23
" 300 m.	.07	.08	.11	.14	.17	.20	.22	.25	.28
" 400 m.	.07	.09	.13	.16	.20	.23	.26	.30	.33
" 500 m.	.07	.10	.14	.18	.22	.26	.30	.34	.38
" 700 m.	.07	.12	.16	.21	.25	.30	.34	.39	.43
700 m. or over	.08	.13	.18	.23	.28	.33	.38	.43	.48

For distance	10 kin	10-12 kin	12-14 kin	14-16 kin	16-18 kin	18-20 kin	For every 5 additional kin or frac- tion thereof
	Y.	Y.	Y.	Y.	Y.	Y.	Y.
Under 50 m.	.13	.15	.17	.19	.21	.23	.04
" 100 m.	.18	.21	.24	.27	.30	.33	.06
" 150 m.	.22	.25	.29	.33	.37	.41	.07
" 200 m.	.25	.30	.34	.39	.43	.48	.09
" 300 m.	.31	.37	.42	.48	.54	.60	.11
" 400 m.	.37	.43	.50	.57	.64	.71	.13
" 500 m.	.42	.49	.57	.65	.73	.81	.15
" 700 m.	.48	.57	.66	.75	.84	.93	.18
700 m. or over	.53	.63	.73	.83	.93	1.03	.20

2. Rates for Special Parcels.

The rates for frail or bulky goods are twice the usual rates for ordinary parcels (no change). New rate: Minimum rate 20 sen. Old rate: 14 sen.

Rates for parcels of Value of Class III (paper money, negotiable papers, etc.)

	New rates	Old rates
50 miles or under	25 sen per kin	20 sen
100 " "	40 " "	30 " "
For every additional 100 miles	13 " "	10 " "
Minimum	60 " "	50 " "

Rates for Dogs (secured in boxes, etc.)

	New rates	Old rates
50 miles or under	25 sen per head	20 sen
100 " "	45 " "	35 " "
For every additional 100 m.	25 " "	20 " "

China Electric Company, Limited.

It was officially announced by the Ministry of Communications, just as we went to press with last issue, that a Company had been formed by the Ministry and the Western Electric Company, Incorporated, and the Nippon Electric Company, Limited, to be known as the China Electric Company, Limited, for the establishment of a manufacturing plant in China to produce telephone and telegraph apparatus and other electrical materials. The Company is capitalized at one million dollars, one-half being subscribed by the Ministry and the remainder equally by the Electric Companies.

The Directors who have been elected for the first year are: Yeh Kung-cho (Vice-Minister of Communications), President and Chairman of the Board; Chow Kia-ni (Director-General of Telegraphs); Ho Yuan-han (Chief of General Department of Telegraphs); Riuji Nakayama; and Clark H. Minor.

Mr. Minor is to be General Manager of the Company, K. T. Long (recently Assistant Superintendent of the Tientsin Telephone Administration) Assistant Manager, and Mr. G. R. Howatt, Secretary-Treasurer. The Assistant Treasurer, who will be Chinese, will be named at the next meeting of the Board of Directors.

This Company has been formed for the express purpose of manufacturing and supplying telephone, telegraph, and general electrical material required by the Chinese Telegraph Administration, as well as other Chinese companies. The head office will be at Peking, and a branch office will be maintained at Shanghai.

Under the terms of the contract between the Ministry and the Electric Companies, the China Electric Company, Limited, will become sole agents in China for the Western Electric Company, Inc., and the Nippon Electric Company, Ltd., and will have the privilege of all of the patents, inventions, advice and experience of both of these very successful electrical manufacturing companies. The China Electric Company, Limited, will sell all kinds of electrical material and apparatus, and is now ready to transact business.

The establishment of such a Company has been contemplated for several years, but heretofore the Electrical Companies did not feel inclined to start manufacturing in China. Recently, however, the present officials of the Ministry of Communications have been successful in inducing the Electric Companies to co-operate with them in this project, and the Ministry is much gratified with the successful establishment of the Company.

The Western Electric Company, Inc., is the great telephone manufacturing Company which supplies the material used by the American Telephone and Telegraph Company, and has established factories in other large countries of the world in conjunction with the capitalists of those countries, where it has worked successfully through the following foreign allied houses: Northern Electric Company, Ltd., Montreal; Western Electric Company, Ltd., London; Le Material Telephonique, Paris; Bell Telephone Manufacturing Co., Antwerp; Western Electric Italiana, Milan; N. C. Heisler & Co., Petrograd; Nippon Electric Co., Ltd., Tokyo.

Mr. Minor, who recently arrived in Peking, has for several years past been the Manager of Le Material Telephonique at Paris and the Bell Telephone Manufacturing Company at Antwerp, and has had much experience in the manufacture and sale of telephone and telegraph equipment to the Scandinavian, Danish, Dutch, Belgian, French, Italian, Swiss, Spanish, South American and Australian operating companies.

The very harmonious and satisfactory results from the co-operation of the Western Electric Company, Inc., in Japan with the Nippon Electric Company, Ltd., during the past twenty years has been gratifying to the officials of both countries and the parties concerned, and the Ministry of Communications is very sanguine for the future development of the China Electric Company, Limited.

China-Japan Industrial Development Co.

The China-Japan Industrial Company, according to the annual report of the company for the last fiscal year, has been in existence for four years, and during that time has engaged in various undertakings in China. Owing to the political instability in China and other obstacles placed in its way, the company admits that its enterprises have not borne as much

fruit as they might otherwise have done. The following is a summary taken from the report:

1.—It was expected that by July, this year, the work of constructing the railway for carrying ores from the iron mine in China, would be completed, and traffic commenced at once. A mine in Anhui was fast being brought to a stage of operation on a business basis. Taking advantage of the special privileges secured by the company for selling material for telephone construction as a result of the telephone loan, the company succeeded in the bid for supplying about Yen 600,000 worth of material to the Department of Communications of the Chinese Government, securing a reasonable amount of profit from the commission. The work of constructing telephones for Wuchang and Hankow was completed during the year under review.

2.—Several new undertakings were entered into by the company. Efforts were being made to secure concessions for working three new mines, which were promising ones from a business point of view, and when the concessions are secured the company will begin operations.

The company entered into definite undertakings with regard to electrical enterprises. A loan of Yen 80,000 was made to the Hengchow Electric Light Company, in Hunan; another of Yen 250,000 to four electric light companies in Hsiajen, Chinghai, Hsiaking, and Pinhu in Chekiang; and another of Yen 150,000 to the Shantan Electric Light Company of Hunan. From these different companies, the China-Japan Industrial Development Company obtained contracts to instal electric light plants. Expert engineers were recommended to them, and the work was fast making progress. There were more than ten electric enterprises being negotiated for, so that during the present fiscal year the company will have quite a handful of work to do.

3.—During the past fiscal year, the company has made other loans to China, such as the loan of Yen 5,000,000 for repairing damages from flood in Chihli Province, of Yen 1,500,000 for industrial development of Shantung, etc. The company has also made loans of Yen 1,150,000 for a spinning industry, and Taels 50,000 for a metal refining industry, etc.

In the line of investments the company purchased a considerable amount of shares of the Oriental Steel Corporation, the Oriental Salt Manufacturing Company, the Exchange Bank of China, etc. The company was intending to purchase shares of the Oriental Ore Transportation Company. This latter company and the Orient Salt Company have been organized with the initiative of the China-Japan Industrial Development Company. The company intended to own one-third of the shares of these two companies.

The gross profits of the company for the year between April 1st, 1917, and March 31st, 1918, amounted to Yen 223,426.06, and the total running expenses to Yen 216,610.28; balance as net profits for that year having been Yen 6,815.75. This amount having been deducted from the net losses carried over from the year preceding (Yen 23,529.94), the net losses carried forward to the present fiscal year amounted to Yen 16,714.16.

The Nanchang-Kiukiang Railway.

Mr. Li Sheng-tao, of the Nanchang-Kiukiang Railway, Kiangsi, recently paid a flying visit to Peking. When interviewed by a press correspondent, Li said that owing to various reasons the Nan-Hsun line had made no progress during the course of the last few years so that up to the present moment, the railway owed the Japanese Asiatic Development Company the sum of \$7,500,000. Unless the Central Government came forward to do something for the railway company, the Japanese would probably take over its interest in accordance with the loan agreements. But the Ministry of Communications refused to make the Nan-Hsun Line a government-owned railway on account of its annual losses so that the best way was to hand it over to the Japanese for its extension to Fukien and Chekiang.

According to a later report the Japanese loan of \$50,000,000 for the extension of the Nanchang-Kiukiang Railway to Santuao in Fukien would soon be signed. The Japanese agent in the loan is Mr. Tachibana of the Toa Kogyo Kaisha, but the agents on the side of China have not yet been ascertained. The draft agreement is said to have been prepared.

If a local report is to be believed serious trouble is expected in connection with the loan. The British Minister, the report says, has already inquired of the Chinese authorities concerning this matter, as it would involve a conflict with British interests, should that line actually fall into the hands of Japan; but the Government has not yet given him any reply. Another report

says that according to a Shanghai letter, the Fukien merchants in that port are making strenuous efforts to oppose the loan, as it would affect the interests of their native province.

The proposed extension is meeting with great opposition from the people of Kwangtung, Kiangsi and Fukien provinces on the ground that this extension, if actually carried out, will mean complete Japanese domination of their provinces in the course of a few years. The people of Fukien are the bitterest opponents of the Japanese scheme because, in their belief, the extension will make Fukien a real Japanese province instead of Japanese sphere of influence. As the said railway is not owned or administered by the Ministry of Communications the negotiations are being carried on by the Japanese with their Chinese friends directly.

Another report says that the people of Kiangsi, Kwangtung, Fukien and Chekiang have petitioned the government opposing the proposed mortgage of the railway and urging that the Ministry of Communications should take over the administration of the line without delay despite its present loss. The natives of Kiangsi say that the provincial assembly at Nanchang should convene a special meeting to raising funds to pay off the Japanese creditors of the line otherwise it is feared that the British Legation will protest against its transfer, etc.

The Japanese paper *Chugui Shogyo* is astounded at the stupendousness of American war expenditure, which America alone can bear. The paper derides its own countrymen who are almost crazed with joy and pride, says the *Japan Times*, for having made no more than the comparatively small sum of Yen 1,200,000,000 in consequence of the war.

Speaking through the editorial columns of the *Yomiuri*, Marquis Kido, an official of the Japanese Bureau of Special Industrial Enquiry, says cotton spinning was one of the first industries to develop from family work into factory industry in Japan. It now commanded Yen 160,000,000 as the total capital invested in it, and produced annually 1,924,000 bales of cotton yarn with 3,500,000 spindles in operation, using 680,000,000 kin of cotton. The greatest problem lying before this industry was where to get the raw material. The Marquis heartily endorsed the project to make common cause with the cotton producers of China.

Awaji Shima, near the Kobe entrance of the Inland Sea, the favorite isle of Japanese poets, is said to be slowly but steadily disappearing. It is estimated that during the last ten years the sea has encroached upon the island a distance of some 360-ft. on an average all round.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, ETC.,

REQUIRED BY THE ACT OF CONGRESS OF

AUGUST 24, 1912,

Of The Far Eastern Review published Monthly at Shanghai, China, for April 1st, 1917.

Republic of China Province of Kiangsu City of Shanghai.

Before me a Vice-Consul for the United States in and for the State and county aforesaid, personally appeared W. H. Donald, who, having been duly sworn according to law, deposes and says that he is the Editor and Part Proprietor of the Far Eastern Review and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of

Publisher: George Bronson Rea, 5 Jinkee Road, Shanghai, China.
Editor: William Henry Donald, 23 Tsongpu Hutung, Peking, China.
Associate Editor: Rodney Gilbert, 5 Jinkee Road, Shanghai, China.
Business Managers: None.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent. or more of the total amount of stock).

George Bronson Rea and William Henry Donald.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state).

None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given: also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a *bona fide* owner: and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Sgd.) W. H. Donald, Editor, Part proprietor.

(Signature of editor, publisher, business manager, or owner).

Sworn to and subscribed before me this first day of July, 1918.

[S.S.] Walter A. Adams,
American Vice-Consul, Shanghai.

ENGINEERING, FINANCIAL, AND INDUSTRIAL NEWS

RAILWAYS.

Peking-Suiyuan Railway.—Latest reports state that the operating revenues of the Peking-Suiyuan Line for June this year, when compared with the corresponding period of the previous year, show an increase. The following table will show the comparative figures:

Revenue for June, 1918, \$335,811; 1917, \$280,036. Increase \$55,775.

Revenue for period January to June, 1918, \$2,131,302; 1917, \$1,781,549. Increase \$349,753.

Railway Extension.—It is reported that negotiations for a loan for an extension of the Supingchie-Chengtung Railway from Chengtung to Kailu, about 100 miles, have been opened. This extension is considered to be a very promising line, as it will tap the kaoliang and wheat districts in the level country along the proposed route.

South Manchuria Railway Co.'s Accounts.—The South Manchuria Railway Company held its 17th annual meeting of shareholders on June 22nd, at which the accounts for the past fiscal year were approved, with a recommendation of dividends to be paid; 6 per cent. as first dividend and 2 per cent. second dividend. The bonds of the company, it was decided, will be increased by Y. 60,000,000. The following is a partial statement of the accounts:—

The gross profits were Y. 69,429,252, including: Receipts from railway operation, Y.34,457,922; receipts from shipping, Y.3,616,633; receipts from ports, Y.3,499,934; receipts from mining enterprises, Y.20,368,463; receipts from manufacturing, Y.1,545,331; receipts from electrical industry, Y.1,583,760; receipts from gas enterprises, Y.352,261; receipts from hotel enterprises, Y.475,312; receipts from different localities, Y.1,930,284; receipts from miscellaneous sources, Y.394,245.

The total expenditure was Y.54,503,609 including: Railway expenses, Y. 10,858,734; shipping expenses Y.2,553,348; port expenses, Y.3,106,861; mining expenses, Y.15,047,917; manufacturing expenses, Y.840,886; electrical enterprises expenses, Y.948,447; gas expenses, Y.169,852; hotel expenses, Y.438,702; local expenses, Y.3,538,708; miscellaneous expenses, Y.3,881,965; interest on bonds, Y.5,886,660; general expenses, Y.4,405,013; difference between face value of bonds and actual receipts, Y.2,806,512. Balance, profits, Y. 14,925,642.

Bangkok - Penang Railway Connection.—Railway connection has been established between Bangkok (Siam) and Penang (Federated Malay States), by a junction between the Siamese Southern line and the F.M.S. line through Kedah and Perlis. The first trains ran on July

1st. Penang can now be reached from Bangkok in three days, and Bangkok from Penang in four days. Owing to shortage of rolling stock there are at present no through trains. Three mail trains a week will be run for the present. The journey by sea at this period takes from five to six days.

Johore State Railway.—June marked another anniversary of the opening of the Johore State Railway (June 25th, 1909). Great advance has been made in road building to feed the line and the State has developed accordingly.

Keihin Electric Railway Company.—The company held an ordinary general meeting of shareholders at the Nihombashi Club building on June 28th, when the following plan for the distribution of profits for the current term was approved: Profits for the term, Y. 234,498; brought over from previous term, Y. 60,233; to legal reserve, Y. 11,800; to special reserve, Y. 11,800; to bonuses, Y. 11,800; to dividend (8 per cent. per annum), Y. 183,600; carried forward to the next account, Y. 75,732.

Shanghai Tramways.—The following is the Traffic Return of the Shanghai Tramways (Foreign Settlement) for the month of June, 1918, and for 6 months ended 30th June, 1918:

	June 1918.
Gross Receipts ...	\$134,811.69
Loss by currency depreciation ...	30,535.61
Effective Receipts ... Mex.	\$104,276.08
Percentage of loss by currency depreciation.	24.06
Car Miles run ...	333,163
Passengers Carried ...	6,179,542
	6 Months ended 30th June, 1918
Gross Receipts ...	\$814,656.56
Loss by currency depreciation ...	180,307.95
Effective Receipts ... Mex.	\$634,348.61
Percentage of loss by currency depreciation.	23.45
Car Miles run ...	1,998,287
Passengers Carried ...	37,050,770

INDUSTRIES.

Sino-Japanese Fishery Company for Shantung.—According to a report from Japanese official circles in Peking, the Chinese and Japanese Governments are now arranging to establish a joint fishery company in the province of Shantung. The terms for the establishment of this joint enterprise, as far as can be ascertained, are that the four places, Tsingtao, Hulutao, Changku and Hsinho, are to be included in the area for fishery and that the company shall be established with a capital of \$10,000,000, each side to advance \$5,000,000. It is said that other terms are still under secret negotiation between the parties.

Sino-Japanese Spinning Co.—A spinning company to be named Nikkwa Boseki Kaisha (Japan-China Spinning Company), is about to be organized by

Messrs. Toyoji Wada, Matazo Kita, Shinjiro Hibiya and other business men interested in the cotton industry and Chinese trade, with a capital of ten million yen, by purchasing the Hungyuan Spinning Mill of Shanghai owned mostly by British merchants. All the shares issued have been subscribed by promoters and supporters. The Shanghai mill has 53,000 spindles and 500 looms.

Lie Teh Oil Mill.—This company pays a dividend of 15 per cent.; transfers to reserve account Tls. 15,000, bringing this to Tls. 75,000, and transfers to a depreciation account Tls. 25,000.

Shanghai Flour.—Shanghai flour valued at over \$150,000 was sent to the Philippine Islands on the China Mail Steamship "Nanking." Over 50,000 sacks are to be shipped. Inability of American, Chinese and Filipino buyers to obtain flour from the United States is responsible for the shipment, which will be followed by others of greater size.

Japan's Southward Advance.—Because of the recent deadlock in the sugar trade in Formosa, various sugar companies in Formosa and elsewhere, it is reported, are planning to branch into other enterprises in southern countries. Recently, the Meiji Sugar Company purchased a rubber plantation, extending over 3,500 acres, on the east coast of Sumatra. Either the company will conduct the plantation directly or have a sister company organized to take charge of it. It is understood that tobacco will also be cultivated by the Meiji sugar interests, and other general colonial undertakings will be engaged in. The Ensuike and the Toyo Sugar Companies are reported to be also contemplating development in that direction.

Projected Aeroplane Factory.—It is reported that the Mitsubishi Company is planning to establish a new plant for manufacturing aeroplanes in Tokuyama, not far from Matsushita Machi, Japan, so that the southern sea coast of Yamaguchi Prefecture will be enlivened by the new enterprises of the two great ruling families in the Japanese industrial world.

International Cotton Co.—The Sino-Japanese Spinning Company which has been promoted by those who are interested in continuing the work of the International Cotton Manufacturing Company of Shanghai—which was purchased by Mr. Suketaro Kawasaki from the British shareholders and which has been re-sold by him to a group of Japanese spinners—reports progress in organization. Already Y. 20 on each of the shares, amounting to Y. 10,000,000, has been paid up. Mr. Toyoji Wada will, it is believed, become the president of the new company.

Scarcity of Electric Power in Japan.—Owing to the rise of manufacturing industries in the neighborhood of Tokyo the supply of electricity is becoming more and more scarce. The total of about 110,000 kilowatts of electricity produced by the Tokyo Electric Light Company, the Kinugawa Hydraulic Electric Company, the Katsuragawa Hydraulic Electric Company, and the Inawashiro Hydraulic Electric Company

at present, has been sold except 10,000 horse-power which is to be supplied by the Inawashiro after October this year to the Tokyo Electric Light Company in addition to what it has supplied. The Nihon Electric Company and the Kinugawa Hydraulic Electric Company, foreseeing the shortage of electricity in the fall this year, are now negotiating with the Tokyo Electric Light Company in regard to the matter. Yokohama is also feeling the pinch. The Yokohama Electric Co. has concluded a contract to buy 6,000 kilowatts of electricity during the winter from the Tokyo Electric Light Co. The Asano Dockyard Company early in July made a contract to purchase 2,500 kilowatts from the Tokyo Electric Light Company for use in making plates for ship-building purposes. This means that the limits of supply in the neighborhood of Tokyo, according to the Government permits, have been overstepped. During 1919, the Kinugawa Hydraulic Electric Company will add to its capacity by 7,500 kilowatts generated by steam, and in 1920 the Katsuragawa Hydraulic Company will add to its capacity 12,000 kilowatts or thereabout. Investigations made by the Tokyo Electric Company showed that about 25,300 kilowatts which has been contracted for has not yet been provided, and 12,300 kilowatts has been contracted for to be supplied in 1919, totalling about 40,000 kilowatt.

The Nippon Menkwa Kwaisha.—During six months from November 1, 1917, to March 31, 1918, the Nippon Menkwa Kwaisha (Japan Cotton Trading Co.) of Osaka has made purchases of property in various cities in Japan and also in Shanghai, to extend its business activities. In spite of the depression caused by the rise of raw cotton, the company has been able to declare gross profits of Y. 4,779,133.98, whereas the current running expenses amounted only to Y. 833,851.35, thus leaving a balance of Y. 3,945,282.63 as net profits. Furthermore, adding the gross profits from the running of the business of the company; from various properties owned, and the amount carried over from the preceding term, and deducting from the total the amount of running expenses; the total net profits of the company amounted to Y. 4,262,389.47. The company declared an ordinary dividend of 20 per cent. per annum, and also a special dividend of 60 per cent. per annum, or a total dividend of 80 per cent.

Watches Made in Nagoya.—According to investigations made by the Watch Makers' Association of Nagoya, the amount of watches made in the districts under the supervision of that association for home consumption during last year were 31,600, valued at Y. 148,381; for exportation 251,789, valued at Y. 920,000; totalling 251,789, valued at Y. 21,068,545. These figures show a considerable increase over last year, that is, 38,579 in the number of watches made and Y. 353,720 in the value. The greater number of watches exported from Nagoya were exported to China, followed by South America and other countries. New markets are being opened everywhere, says the report. Springs for watches are still lacking in supply.

Rise of Price of Buttons.—The price of shell buttons in Japan has risen 20 per cent. recently, and promises to rise still more. This is attributed to the fact that Australian shell has not been transported with despatch owing to the lack of bottoms and high freight rates. This led to a scarcity of the raw material in Japan. Laborers have also found better employment for themselves in more profitable fields, and the cost of labour has increased considerably. The buttons made of metal have also risen in price because of the rise in the price of brass and iron and also because of the scarcity of labor.

HARBORS, DOCKYARDS, ETC.

Kuhara's New Enterprise.—The new enterprise of the Kuhara interests, an engineering works in Matsushita Machi, Yamaguchi Prefecture, Japan, is fast being put into working order. Already the number of hands employed has reached 600. The works will be engaged exclusively in the manufacture of machinery and engines for the Nihon Steamship Company. The western part of 12,000 *tsubo* of salt field in Koigahama, near the works, will be dug up and turned into a new dockyard. The earth excavated will be used for filling the site to be used for the works. The dock to be newly established will be able to take in ships of 10,000 tons.

Penang Harbor Board.—The statement of income and expenditure for the second half of 1917 shows a loss of \$41,654.

MINING.

Anhui Minerals.—An exhibition was recently opened at Anking, the capital of Anhui Province. The minerals section was specially interesting, in view of what the working of them might do for the province. From the exhibits it was claimed that Anhui could produce gold, silver, copper, iron, brass, coal, sulphur, and so on. Specimens of coal were there from several different places. In only one or two places are attempts being made to work the deposits. Some of the coal is very good, as we can testify, after using a considerable amount, but where it is being mined, work is very slow, and primitive methods do not permit the miners to go very deep. As far as we are aware, coal is the only one of all the minerals that is being worked commercially. Some packets of sulphur were there from Chihchowfu. They were quite similar to the packets which were sent to the Panama Exhibition. Several of the diplomas gained by Anhui Province at that Exhibition were also on view.—*N.-C. Daily News.*

China's Iron Mining Laws.—The Japanese are said to have made representations to the Chinese Government concerning the iron mining regulations which will not permit foreign capitalists to exploit Chinese mines as they would like. A local news agency reports that the Chinese Government has already drafted a reply to Baron Hayashi, the Japanese Minister's communication in

regard to the iron mining regulations. The Chinese authorities are said to be determined to make it plain that the sovereign rights of a country and cordial friendship to be shown to another state are two distinct things. As these regulations are orders to be applied and obeyed within the country, no matter what their nature is, they can never be cancelled or altered as demanded by an alien country.

Kuangtung Mining Loan.—The mortgage of Kuangtung mining properties for a Japanese loan by General Lung Chi-kuang has been approved by the Government, reported the Peking correspondent of the *Peking and Tientsin Times*, in July, and negotiations with Japanese financiers were entered into. In one quarter it is stated that the terms of the agreement have been arrived at, but that the Japanese are insisting on the agreement being signed by the Minister of Agriculture and Commerce.

Suan Mine Output.—During the month of June the mills on the Suan Concession treated a total of 17,250 tons of ore, gross recovery amounting to Yen 253,650.00. The prospects generally continue to improve and shipments of high-grade ore from the Tong Ahn mine are now being made to the Tul Mi Chung mill.

IRON AND STEEL.

Iron Mine at Yih-hsien.—Permission has been granted by the Chinese Ministry of Agriculture and Commerce to Lu Tsong-vu to develop the iron mines at Yih-hsien.

Lungkwan Iron Mines Case Settled.

—The authorities at Peking have at last submitted to Lu Tsong-vu's demand by including Yientongshan within the Lungkwan iron area and appointing him sole manager of the Company to operate it. For the time being, there is to be no superintendent. A temporary office will soon be opened at Peking to make preliminary arrangements.

In connection with this property a dispute arose between Lu Tsong-vu and Liang Shih-vi, which was settled by the arbitration of Premier Tuan, who took the mine under Government control. This act was approved by the Cabinet, which decided that the capital shall be \$5,000,000, half of which shall be furnished by the Government and half by private capitalists.

The deposit is about eight miles from the Shienhuahsien station on the Peking-Kalgan railway.

Japan and China's Iron Deposits.

—The Chinese newspapers have been greatly agitated for some time over the proposed hypothecation to Japan of various iron deposits in the country in return for a loan. The papers claim that the amount of the loan is Yen 100,000,000 and the deposits include those at Lungkwan, Shienhwa, Taveh, Yochan, Fenghuangshan (Molingkwan), and other deposits in Shantung and Anhui provinces. It is suggested that big iron-works will be established on the Yangtze or elsewhere to be jointly managed by a Sino-Japanese Company.

Steel Plates Made by Kawasaki Dockyard Co.—The steel plate manufacturing plant of Kawasaki Dockyard Company of Kobe, Japan, has already completed preparations and is reported to have commenced work. It has five furnaces with a capacity of 25 tons each. Chiefly large sized and middle sized plates will be manufactured. It is estimated that the daily average production will amount to 125 tons. It is also planned to establish works to manufacture motors for aeroplanes or automobiles. Two military automobiles, for which the company received an order from the Army Arsenal in Osaka, are to be built in the machinery section of the plant.

The Fenghuangshan Iron Deposit.

—The Government denied that it proposed to give the Fenghuangshan property as security to Japanese financiers, whereupon the Civil Governor of Kiangsu Province wired to the Ministry of Commerce and Industry at Peking requesting the issue of a mining license to the Hwaning Company, a Chinese concern, to start operations. This property has been the subject of much agitation for some time past owing to Japanese endeavours to secure the right to work it in conjunction with certain Chinese, the Japanese claiming a prior right on account of the loan made to the late Yuan Shih-kai on the security of this property. In reality the loan was made through a Chinese syndicate claiming the right to the property, but the loan was not officially recognized by the Ministry of Commerce and Agriculture. A new Chinese Company has been formed to work the property but so far its claims have not been admitted by the Government.

Very strong petitions were sent to Peking by the Provincial Assembly of Kiangsu and the leading native gentry at Nanking in particular protesting against the mortgage of the Fenghuangshan iron mines to the Japanese.

In the House of Commons (London), in replying to a series of questions on this subject asked by Sir Charles Hobhouse, the Foreign Under Secretary said the Government was aware that negotiations were proceeding for the acquisition by a Japanese syndicate of the Fenghuangshan iron mines, but no official information that the negotiations had been concluded had been received. The mines are situated on the Yangtze River, an area which His Majesty's Government regarded as their special sphere of interest in China, in the sense that British subjects possess prior claim to favorable consideration by Chinese authorities of the applications they make for industrial concessions in that region. But they thought that neither British nor any other foreign claim to spheres of interest in China should be pressed inconsistently with the principle of the open door. Neither the British Ambassador nor the Foreign Office had been consulted in the matter.

Price of Iron in Japan.—The pig-iron market in Japan has experienced a series of extraordinary rises in price since the beginning of the war, especially in the latter half of last year and during the first six months of this year. The following list of quotations shows the fluctuations in values:

1913, January, Y.47; August, Y.42; December, Y.39; 1914, January, Y.39; April, Y.38; August, Y.55; December, Y.44; 1915, January, Y.45; May, Y.53; August, Y.60; December, Y.80; 1916, January, Y.95; May, Y.124; September, Y.105; December, Y.85; 1917, January, Y.88; March, Y.120; July, Y.190; August, Y.300; December, Y.315; 1918, January, Y.325; March, Y.370; May, Y.384; June, Y.420.

The price in the early part of July has been quoted as Yen 430, while in Osaka it was quoted at Yen 440-50, which is eleven times as high as before the war.

Iron Foundry for Nagasaki.—A meeting was recently held at Nagasaki (Japan) to establish an iron foundry. The capital is to be five million yen.

The Mitsubishi Korean Iron Foundry.—Now that the supply of pig-iron has become very scarce in Japan and elsewhere and the price has risen enormously, news that the Kenjiho iron foundry in Korea, belonging to the Mitsubishi Iron Foundry Company, has installed and put into operation two furnaces with a capacity of 200 tons each has attracted considerable attention among those interested in the iron and steel trade. It was reported that one of the two furnaces has made favorable progress and that the daily output at present is 150 tons. It is expected that the foundry will shortly be able to turn out 200 tons daily. The second furnace will be ready for operation within a month or so. When it begins to operate the foundry will be able, it is stated, to produce 400 tons a day. The products of the foundry will be used by the Mitsubishi Dockyard Company mostly, and the remainder will be sold to the public. Already, what is estimated to be available for sale has been pledged to ten different companies interested in iron and steel, so that very little will actually be left for sale to the general public.

Big Profits of Japanese Government Iron Foundry.—The revenues of the Government Iron Foundry at Yawata, in Kyushu, for 1917 were estimated in 1916 at Yen 27,000,000. The enormous total of Yen 45,000,000 (the amount in the preceding year was Yen 3,000,000), was, however, reached. This increase was due chiefly to the rise in the price of iron and steel, which induced the foundry to work its plants to their full capacity; and to the fact that whereas up to September last year the products of the foundry were sold at one-third of the market prices, because of various irregularities in the deals, the prices were raised soon after the airing of the Kyushu scandal in September last year. Despite the rise the ship-building companies and the iron dealers of Tokyo and Osaka, who had special privileges when previously buying products of the foundry have been able to reap great profits as the prices have still been lower than the market price. When the new chief of the foundry, Mr. Shirani took office, he cut out all the old irregular connections and stopped special privileges, and from May, this year, all the sales have been made by auction, thus enabling the foundry to make re-

cord breaking profits. The revenues of the Foundry for the present fiscal year are expected to be much greater than those for the past year.

Oriental Steel Corporation.—The Oriental Steel Corporation of Japan held its first regular annual meeting of shareholders during June. Mr. B. Nakano, president of the corporation, reported that the transfer of the property of the Tobata Steel Works of the Kuhara Company, which was amalgamated with the Oriental some time ago, was successfully effected. A part of the furnaces which were ordered in America were shipped on board the "Alms Maru" of the Osaka Ishosen Kaisha from Tacoma, on June 14, and the rest during July, and the entire shipment of the plant will arrive during September, to be installed in the company's works. It was also reported that the Oriental Ore Transportation Company had been organized with a capital of Yen 200,000, in co-operation with the China-Japan Industrial Development Company and a Chinese Mining Company. Three persons will be appointed as auditors of the Oriental Steel Co., of whom two have already been decided upon, namely Mr. Kumpei Mimura, representing the Mitsubishi interests, and Mr. Nagabumi Ariga, representing the Mitsui interests. The meeting decided upon a dividend of 5 per cent. The following is a partial report of the accounts:

Gross profits, Yen 285,200,058; total running expenses, Yen 92,177,75; balance, net profits for season, Yen 193,022,758; of this balance, redemption of debts for establishing the Corporation, Yen 23,956,39; balance carried forward, Yen 169,066,368. In addition to the foregoing, the following report was added: Dividend on shares, Yen 271,800; interest on Yen 7,500,000 of shares, Yen 235,200; Interest on shares, Yen 2,500,000, before amalgamation, Yen 36,600.

Iron and Wolfram in South China.—The Chairman of the Hongkong Foundry Co., stated in the course of his speech at the annual meeting of the Company at Hongkong, that there are, unquestionably, large deposits of iron ore, coal, limestone, and wolfram available in the neighboring provinces Chinese mine-owners were prepared to contract for the supply to the Company of all coal and iron ore required.

From official reports a new development of interests had resulted by the growing demand for wolfram and the recent discovery that the mineral was to be found in marketable quantities in Kuangtung Province. It was said that the native mistook it for manganese ore, or iron ore, until a suspicion was raised by the high prices offered that it must contain something different from common metals. The Japanese first learned of the value of the "iron ore" in Hunan province, and offered about 27 cents Mexican, or 17 cents gold, a pound for it; other buyers learned of the bargain and offered better prices. At the end of 1917 the average ore commanded about \$50 Mexican, or \$32 gold, per hundred pounds. There seemed to be considerable difference of opinion as to what effect this new supply from South China would have upon the markets. One

buyer expressed the opinion that, with a proper development of the South China fields, the available supply of tungsten in the world could be increased by at least 20 per cent., while shipments had so far been considerable. The actual development of the fields as indicated had not yet commenced.

Hongkong Steel Foundry Co.—At the annual meeting of the Hongkong Steel Foundry Co., Ltd., held early in July it was stated that the balance at credit of profit and loss account after allowing for depreciation, stock-in-trade, etc., was \$55,891. The Chairman (Mr. A. G. Gordon) stated that during the year two new sets of radio-furnaces had been installed, making in all ten double sets in operation at present, and they intend laying down one or two sets of forced-draught patent furnaces at an early date, full working drawings for which are on the way from England. The works had been extremely busy during the year, and among the orders on hand the Company had been engaged on heavy castings for the standardized Government ships. The future outlook was promising.

FINANCIAL.

Salt Surplus.—A report from Chinese financial circles states that in addition to the sum of \$2,425,000 and Tls. 500,000, released by the Banking Group as the salt surplus, another sum of \$1,200,000 was paid over about the middle of July as a repayment of funds retained in Hupeh, Hunan and Szechuan last year. The total surplus of the Salt Revenue for June is \$3,140,000 and the Ministry of Finance has written to the Banking Group asking for the immediate release of same to meet an urgent requirement. According to a reply from the Banking Group a sum of \$2,100,000 will be paid over in Shanghai and \$1,040,000 in Tientsin.

Foreign Bonds Held by Japan.—Since the war began, the foreign bonds which Japan has held have amounted to Yen 525,945,000. Of this total British bonds amounted to Yen 185,174,000; French bonds Yen 77,708,000; Russian bonds 238,063,000; and Chinese bonds Yen 25,000,000. These figures were obtained by reducing pounds, francs and roubles into Japanese currency.

New Korean Bank.—Sanction was given by the Chosen Government-General on July 2 to the establishment of the Chosen Shokusan Ginko (Industrial Bank of Chosen). The bank will have a capital of Yen 10,000,000 in 200,000 shares. Of these shares, 63,597 will be allotted to the shareholders of Agricultural and Industrial Banks in Chosen, which will be fused into the new bank, the remainder to be offered for public subscription. The regulations, however, provide that the subscribers should be Japanese subjects or juridical persons or public bodies established in accordance with the laws of the Empire.

Japan - American Trust Co.—The Japan-America Guaranty Trust Company, Ltd. (Nichiei Guaranty Trust Company, Ltd.), has opened offices at

Shanghai. Mr. W. S. T. Nien will be the Shanghai agent. The main offices of the company, which is capitalised at Yen 20,000,000, are at Tokyo. The Company will finance enterprises in China and other parts of the Far East and has issued 400,000 shares, 30,000 to be offered for public subscription.

New American Bank for China.—An announcement has been made to the effect that a corporation to be known as the Asia Banking Corporation has been formed under the laws of New York State with a capital of \$2,000,000 and a surplus of \$500,000. Among the stockholders in the new company are the Mercantile Guaranty Trust Company of New York, the Bank of the Americans, the Anglo and London and Paris National Bank of San Francisco, the First National Bank of Portland, Ore., and the National Bank of Commerce of Seattle, Wash. A few other banks interested in foreign trade may be shortly added to this preliminary list. Its principal business will be carried on in the Far East. The head office will be in New York. An agency will most probably be established in Shanghai, where it is proposed to locate the central manager of the Far Eastern business. Present plans contemplate the future establishment of other branches in Hankow, Peking, Tientsin, Harbin and Vladivostok. As soon as the Russian situation clears, the new bank will be ready to establish itself in Russia and Siberia, or to affiliate itself with old or new Russian banks.

An interim dividend of £2 3s. per share, subject to deduction of Income-tax, has been declared by the Hongkong and Shanghai Banking Corporation for the half-year ending June 30th at the rate of 3s. 3½d. per dollar.

SHIPPING.

The American Shipping Board have given the Chinese Government yard at Shanghai (Kiangnan Arsenal) contracts

for the construction of four cargo steamers each of 10,000 tons and has taken options for building 80,000 more tons there. Thirty-five thousand tons of steel will be shipped from America but the engines and other fittings will be built in China. The expenditure involved is \$30,000,000. Deliveries are to begin six months after the steel is received. The Chairman of the Shipping Board said he found China splendidly equipped. The Chinese Government yard ranks as one of the most efficient in the world.

Singapore's First Concrete Ship.—A new concrete vessel to be used as a ferry boat to convey the goods wagons of the Federated Malay States Railway across the Johore Straits was launched at Singapore early in July. The vessel is 120-ft. long, 27-ft. beam, and 8-ft. moulded depth. The gross displacement is 500 tons, the deadweight capacity about 230 tons. The boat is designed to carry six wagons, requiring some 120 tons.

Nisshin Kisen Kaisha.—The Nisshin Kisen Kwaisha, the Sino-Japanese Steamship Company, during the half-year from November 1st, 1917, to March 31st, 1918, experienced various difficulties, owing to the politically unsettled conditions along the Yangtze river and tributaries on which the company's steamers ran, and also on account of the rise of silver and the European War. In spite of such inconveniences, the Company has been able to reap gross profits of Y. 3,626,928.77, and net profits of Y. 672,380.58. A dividend of 12 per cent. per annum has been declared. During the period the company increased its tonnage, and at the end of the term owned 15 large steamships, 9 steam boats, totalling 24 steamers; 11 junks, 12 floats and 9 landings.

MISCELLANEOUS.

Flood Prevention at Tientsin.—The dyking of Tientsin has been proceeding for some time to prevent a recurrence of last year's calamity. By the middle of

July the French and British dykes had been completed, the Japanese dyke which was originally fairly substantially built had been repaired generally but had not been reconstructed. The dyke in the ex-German Concession was under construction, the original dyke having been removed from Elgin Avenue roadway.

The dyke round Tientsin was under construction along the Hai Kwang Ssu Road, where it was about half finished. Construction was also in progress on the Tung Chia Lou Road between the Race Course and Taku Roads. Preparations were being made for the length from the north end of the Hai Kwang Ssu Road northward. It is intended to connect the dyke at the north end of the Hai Kwang Ssu Road with the Japanese Concession dyke which continues along the Nan Men Wai Road towards Tientsin City. With this connection the dykes now under construction will surround the Foreign Concessions.

Shanghai's Sewerage.—Dr. G. J. Fowler, Professor of Applied Chemistry in the Indian Institute of Science and noted bacteriologist, who came to Shanghai last May at the request of the Municipal Council, recommends, as a sewage system for Shanghai, the "activated sludge process." He urges the necessity of acquiring a tract of land of at least 300 acres extent where sewage may be discharged and treated.

The present sewers, Prof. Fowler suggests, may be used for the reception of rain water. The smaller creeks should be inverted in concrete or completely culverted and, where economic or desirable, turned into sewers. To take up the whole problem he urges the formation of a Joint Board, comprising representatives of all interests involved, including those of the Chinese City.

As regards the question of water supply, Prof. Fowler recommends that a laboratory with a specially qualified staff be established at the Waterworks for continuous research in water and sewage disposal problems, the work to be done in close co-operation with the Whangpoo Conservancy officials.

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